

LACKAWANNA COUNTY PENNSYLVANIA

Interim Soil Survey Report

Volume 1

SOIL INTERPRETATIONS



Prepared By
UNITED STATES DEPARTMENT OF AGRICULTURE
Soil Conservation Service

In Cooperation With

THE PENNSYLVANIA STATE UNIVERSITY
College of Agriculture

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES
Soil and Water Conservation Commission

HOW TO USE THIS REPORT

1. Use the Photo Index Map in Volume II.

The small county map shows the location of the survey area and serves as an index to the aerial photo soil survey field sheets. The survey area is subdivided into numbered blocks. The number inside the block corresponds to the aerial photo number used for the soil survey. Locate the general area in which you are interested on the map and note the aerial photo number.

2. Use the Aerial Photo Soil Survey Maps in Volume II.

Turn to the Soil Survey Maps, and look up the proper map. When the correct map has been found, locate the specific area on the map which you want to study. Soil boundaries are outlined by black lines, with a symbol for each soil mapping unit. (See list of symbols). The symbol is inside the soil boundary if there is enough room; otherwise, it is outside the area and a pointer shows the area where the symbol belongs. Make a note of the soil mapping unit symbol occurring in the specific area which you have selected.

3. Use Table 1 in either volume to find soil name.

Look up the map symbol along the left-hand column. The symbols are listed numerically. When you have located the mapping symbol, read across for the soil name. (Some mapping symbols have been combined with others to reduce and correlate the units for which interpretations are made.)

4. Use the Interpretive Tables in Volume I.

After noting the soil name from Table 1, you are ready to look up (alphabetically) the brief soil series descriptions or soil interpretations in any of the tables in Volume I. Refer to the list of tables in the Table of Contents for the page number of the table you want to use. Narratives explaining the interpretations precede each table.

LACKAWANNA COUNTY, PENNSYLVANIA

INTERIM SOIL SURVEY REPORT

VOLUME I

SOIL INTERPRETATIONS

Prepared for and in conjunction with the
LACKAWANNA COUNTY PLANNING COMMISSION

Cooperating Agencies

LACKAWANNA COUNTY COMMISSIONERS

LACKAWANNA COUNTY SOIL AND WATER CONSERVATION DISTRICT

Prepared by

UNITED STATES DEPARTMENT OF AGRICULTURE

Soil Conservation Service

In cooperation with

THE PENNSYLVANIA STATE UNIVERSITY

College of Agriculture

and

PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL RESOURCES

Soil and Water Conservation Commission

Soil Survey by
Donald B. Holzer
Edward H. Sautter
Samuel A. Browning

"Financial assistance in completing the soil survey of Lackawanna County was provided, in part, by the Lackawanna County Commissioners under a cost sharing agreement with the Soil Conservation Service. The Lackawanna County Regional Planning Commission prepared the general soil map and the soil survey map index."

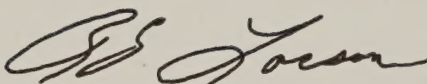
FOREWORD

The USDA Soil Conservation Service has been making soil surveys for over three decades. Historically, these soil surveys were used almost solely for agricultural purposes. Today, soil surveys have a much broader scope. Soil surveys are now being interpreted for community development, engineering and recreational uses, in addition to agriculture, woodland and wildlife uses. They are multipurpose surveys designed for a wide variety of users ranging from farmers to loan agents and from community planners to contractors.

This soil survey was made cooperatively by the United States Department of Agriculture, Soil Conservation Service; The Pennsylvania State University, (College of Agriculture); and the Pennsylvania Department of Environmental Resources, State Soil and Water Conservation Commission.

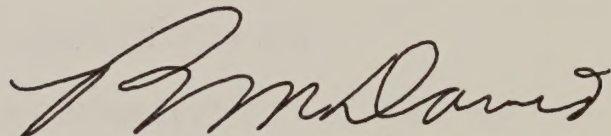
This special report is designed to provide basic soils data during the interim period between the completion of field mapping and the publication of the soil survey. The Lackawanna County Soil Survey will be published as a part of the National Cooperative Soil Survey when the entire area is surveyed.

This report will be a helpful guide to local people in developing comprehensive land use plans for their communities. Properly used, this report can help the Lackawanna County Regional Planning Commission, the Lackawanna County Soil and Water Conservation District, township officials, planning consultants, engineers, farmers, homeowners, developers and others to make better use of their soil resources.



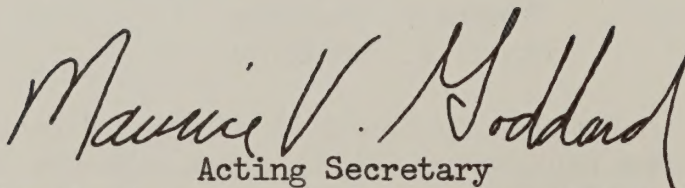
Dean

College of Agriculture
The Pennsylvania State University



State Conservationist

Soil Conservation Service
United States Department of Agriculture



Acting Secretary

Pennsylvania Department of Environmental Resources

VOLUME I

CONTENTS

	<u>Page</u>
<u>INTRODUCTION</u>	
<u>SECTION I - THE SOIL SURVEY</u>	1
How the Survey Was Made	2
Descriptions of the Soils	2
Numerical Legend	18
General Soil Map	30
<u>SECTION II - SOIL INTERPRETATIONS</u>	35
Soil Interpretations and Their Use	36
Estimated Soil Properties	36
Soil Interpretations for Engineering	43
Soil Limitations for Community Development	49
Soil Limitations for Recreational Development	71
Soil Suitability for Cropland	92
Soil Suitability for Wildlife	107
Soil Suitability for Woodland	119

GLOSSARY

TABLES

Table 1	Numerical Legend	18
Table 2	Estimated Soil Properties Significant to Engineering	39
Table 3	Soil Interpretations for Selected Engineering Uses	44
Table 4	Soil Limitations for Community Development	51
Table 5	Soil Limitations for Recreational Development	73
Table 6	Soil Suitability for Cropland	93
Table 7	Soil Suitability for Wildlife	109
Table 8	Soil Interpretations for Woodland	123

INTRODUCTION

This report contains soil interpretations (Volume I) and soil maps (Volume II) for all the different kinds of soils in Lackawanna County. Lackawanna County is in eastern Pennsylvania. It is bordered on the north by Susquehanna County, on the east by Wayne County, on the south by Monroe County, and on the west by Luzerne and Wyoming Counties.

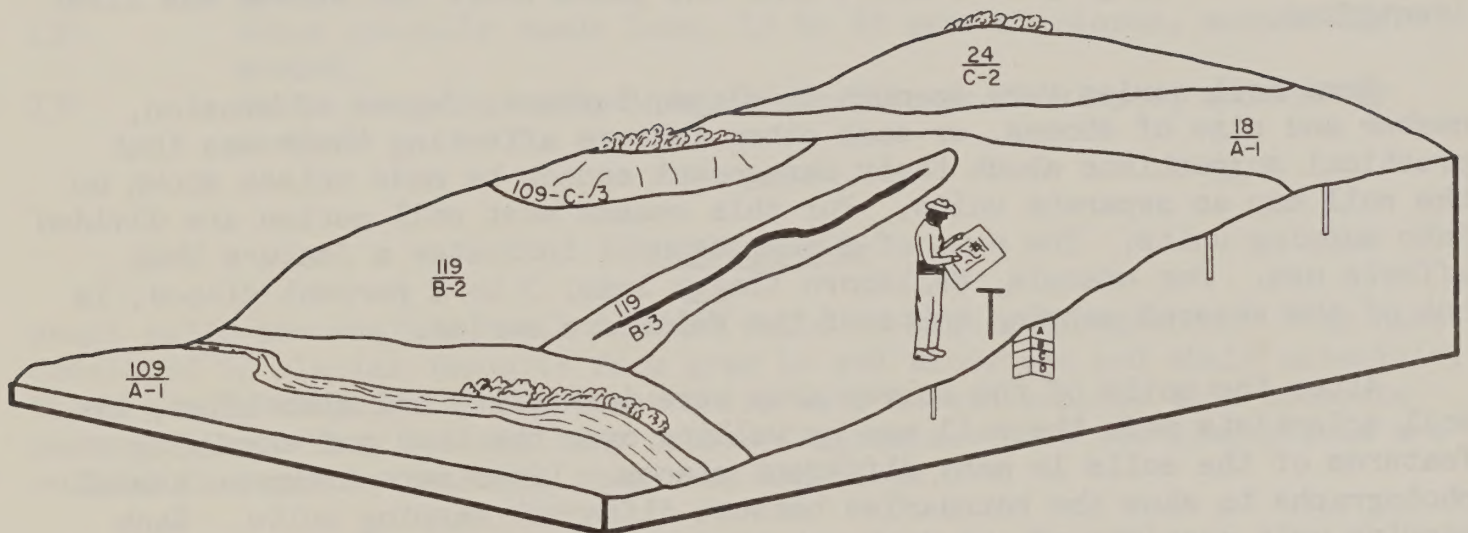
This report will furnish users with copies of field soil maps and soil interpretations on an interim basis until the publication of a soil survey at a later date. Information contained herein provides soils information needed for use by soil and water conservation districts, soil conservationists, county agents, farmers, home owners, planning commissions, government officials, planning consultants, and others. This information is useful as a guide for regulating good land use and management for the benefit of the county and its communities.

Lackawanna County has some of the most rapidly developing areas in northeastern Pennsylvania. New homes, shopping centers, schools, industrial plants and roads are being constructed to meet the demands of the increasing population on lands formerly used for agriculture. Much of the area is not served by municipal water or sewage. Soil problems involving on-site sewage disposal, water supply, basement and foundation excavations, road construction and other land uses occur in this area. Shallow, slowly permeable, steep and wet soils have the most severe use limitations throughout the area. In addition, acid spoil and wastes from the coal mining industry present special problems.

Soil interpretations for engineering, community and recreational development, cropland, wildlife and woodland, based on field soil surveys and laboratory tests, are included in this report. These interpretations will aid the users in preparing general county and community plans. The information in this report is not intended to eliminate on-site investigations. It is intended to serve as a guide for screening sites and for planning more detailed investigations at minimum costs.

SECTION I

THE SOIL SURVEY



HOW THE SURVEY WAS MADE

The soils of Lackawanna County were studied, classified and mapped by soil scientists of the USDA Soil Conservation Service. They made this survey to learn what kinds of soils are in the area, where they are located, and how they can be used. The survey was conducted as a part of the National Cooperative Soil Survey Program.

As the soil scientists traveled over the land, they observed steepness, length, and shape of slopes; kinds of native plants or crops; kinds of rock; and many other facts about the soils. They studied soils along roadbanks, pipelines and other excavated areas where the soil layers were undisturbed. They dug many holes to expose the sequence of soil layers that make up the soil profile. The soils were classified by first examining the soil and comparing the thickness and arrangement of soil layers with soils already mapped and classified in other counties and other states. Scientific classification of the soils was then completed by use of the National Comprehensive System of Soil Classification.

Soils having similar features make up a soil series. All major layers of the soils of each series are similar in thickness, arrangement and other identifying features. All soils in the United States having the same series name are essentially alike in these features. Each soil series is named for a town or other geographic feature near the place where the series was first identified.

Some soil series vary so much in slope, texture, degree of erosion, number and size of stones, or some other feature affecting their use that practical suggestions about their management cannot be made unless shown on the soil map as separate units. For this reason most soil series are divided into mapping units. The name of a mapping unit indicates a feature that affects use. For example, Wellsboro flaggy loam, 3 to 8 percent slopes, is one of the several mapping units of the Wellsboro series.

After the soils of the survey area were identified and classified, the soil scientists made the soil map by walking over the land and examining features of the soils in many different places. Lines were drawn on aerial photographs to show the boundaries between different mapping units. Each mapping unit consists of one dominant kind of soil, but includes small areas of different soils that were not practical to map separately at the scale used.

DESCRIPTION OF THE SOILS

This section contains a description of each soil series and land type in the county together with a list of mapping units. These descriptions point out general features that are most likely to affect the use and management of the individual soils. The important characteristics of the major layers of a typical soil are described. The symbol and name of the mapping units are listed at the end of each series description. Mapping unit names are tentative and subject to change in the final correlation of the survey.

ALTON SERIES

Alton soils are deep, well drained soils on glacial outwash terraces. They have developed in gravelly, water worked, glacial outwash sediments from mixed gray and red sandstone and shale. These nearly level to very steep soils have a very gravelly subsoil with moderately rapid permeability. Most use limitations are related to permeability and slope.

Major layers of a typical soil:

- 0-10 inches - Dark brown, friable, gravelly sandy loam.
- 10-28 inches - Yellowish brown, friable, very gravelly sandy loam.
- 28-60 inches - Stratified sand and gravel.

Mapping Units:

- 13A Alton gravelly sandy loam, 0 to 3 percent slopes.
- 13B Alton gravelly sandy loam, 3 to 8 percent slopes, moderately eroded.
- 13C Alton gravelly sandy loam, 8 to 15 percent slopes, moderately eroded.
- 13D Alton gravelly sandy loam, 15 to 25 percent slopes, moderately eroded.
- 13F Alton gravelly sandy loam, 25 to 75 percent slopes, moderately eroded.

ARNOT SERIES

Arnot soils are shallow, well drained soils on glaciated uplands. They have developed in glacial deposits from gray to red sandstone and shale materials. These gently sloping to very steep soils have a thin subsoil with moderate permeability. They contain many coarse fragments. Most use limitations are related to depth to bedrock, rockiness and slope.

Major layers of a typical soil:

- 0-6 inches - Very dark grayish brown, friable, channery silt loam.
- 6-17 inches - Yellowish brown, friable, channery silt loam.
- 17 inches + - Sandstone bedrock.

Mapping Units:

- 48B Arnot rocky silt loam, 3 to 8 percent slopes, moderately eroded.
- 48C Arnot rocky silt loam, 8 to 15 percent slopes, moderately eroded.
- 48D Arnot rocky silt loam, 15 to 25 percent slopes, moderately eroded.

50B	Arnot very rocky silt loam, 0 to 8 percent slopes.
50D	Arnot very rocky silt loam, 8 to 25 percent slopes.
50F	Arnot very rocky silt loam, 25 to 70 percent slopes.

ATHERTON SERIES

Atherton soils are deep, poorly drained soils on glacial outwash terraces. They have developed in outwash deposits of mixed textures. These nearly level soils have a mottled subsoil with slow permeability. The water table is near the surface most of the year. Most use limitations are related to the high water table.

Major layers of a typical soil:

0-22 inches	- Very dark gray, friable, silt loam.
22-40 inches	- Mottled dark yellowish brown and gray, friable, gravelly silt loam.
40-60 inches	- Stratified sand and gravel.

Mapping Unit:

18A	Atherton loam.
-----	----------------

BATH SERIES

Bath soils are deep, well drained soils on glaciated uplands. They have developed in yellowish brown, loamy glacial till from mixed sandstone and shale. These gently sloping to steep soils have a fragipan in the lower subsoil. The permeability of the subsoil is slow. These soils contain many coarse fragments. Most use limitations are related to slow permeability, slope and coarse fragments.

Major layers of a typical soil:

0-7 inches	- Dark grayish brown, friable, channery silt loam.
7-29 inches	- Yellowish brown, friable, channery silt loam.
29-60 inches	- Dark yellowish brown, firm, channery silt loam, to flaggy loam.

Mapping Units:

51B	Bath channery silt loam, 3 to 8 percent slopes, moderately eroded.
51C	Bath channery silt loam, 8 to 15 percent slopes, moderately eroded.
51D	Bath channery silt loam, 15 to 25 percent slopes, moderately eroded.
153D	Bath extremely stony silt loam, 0 to 8 percent slopes.

153D Bath extremely stony silt loam, 8 to 25 percent slopes.
 52B Bath flaggy silt loam, 3 to 8 percent slopes.
 52C Bath flaggy silt loam, 8 to 15 percent slopes, moderately eroded.
 53B Bath very stony silt loam, 0 to 8 percent slopes.
 53D Bath very stony silt loam, 8 to 25 percent slopes.
 (Also mapped with Lackawanna Series)

BIRDSALL SERIES

Birdsall soils are deep, very poorly drained to poorly drained soils in upland depression areas. They have developed in water laid deposits of silts and sands. These nearly level soils have a slowly permeable subsoil. The water table is at the surface most of the year. Most use limitations are related to the high water table and slow permeability.

Major layers of a typical soil:

0-10 inches - Dark gray, friable, silt loam.

10-60 inches - Gray, friable, silt loam to very fine sandy loam.

Mapping Unit:

348A Birdsall silt loam.

BRACEVILLE SERIES

Braceville soils are deep, moderately well drained soils. They have developed on outwash terraces in loamy deposits derived from gray sandstone and shale materials. These nearly level to gently sloping soils have a moderately slowly permeable fragipan in the subsoil. The water table is high during wet seasons. Most use limitations are related to restricted permeability and the seasonal high water table.

Major layers of a typical soil:

0-19 inches - Yellowish brown, friable, gravelly loam.

19-38 inches - Mottled dark yellowish brown and gray, firm, gravelly sandy loam.

38-60 inches - Dark yellowish brown, firm, very gravelly loam.

Mapping Units:

16A Braceville gravelly loam, 0 to 3 percent slopes.

16B Braceville gravelly loam, 3 to 8 percent slopes, moderately eroded.

CHIPPEWA SERIES

Chippewa soils are deep, poorly drained soils on glaciated uplands. They have developed in loamy glacial till composed of gray and brown sandstone and shale material. These nearly level to gently sloping soils contain many coarse fragments and have a slowly permeable fragipan in the subsoil. These soils have a high water table during wet seasons. Most use limitations are related to the seasonal high water table and slow permeability.

Major layers of a typical soil:

0-13 inches - Mottled dark gray and brown, friable, channery silt loam.

13-50 inches - Mottled grayish brown and yellow, firm, channery silt loam.

Mapping Units:

Mapped only with Norwich soils. See Norwich Series for the mapping units.

HOLLY SERIES

Holly soils are deep, poorly drained soils on flood plains. They have developed in loamy water worked material eroded from nearby glaciated uplands. They are underlain by stratified sand and gravel. The water table is near the surface during wet seasons and the soils are subject to flooding. Most use limitations are related to the seasonal high water table and flooding.

Major layers of a typical soil:

0-14 inches - Mottled dark gray and brown, friable, silt loam.

14-45 inches - Mottled gray and yellow, friable, silt loam.

45-60 inches - Dark gray to greenish gray, stratified sand and gravel.

Mapping Unit:

6 Holly silt loam.

LACKAWANNA SERIES

Lackawanna soils are deep, well drained soils on glaciated uplands. They have developed in reddish brown, loamy, glacial till from red sandstone and shale material. These gently sloping to very steep soils have a slowly permeable fragipan in the subsoil. These soils contain many coarse fragments. Most use limitations are related to slow permeability, slope, and coarse fragments.

Major layers of a typical soil:

- 0-8 inches - Dark reddish brown, friable, channery loam.
- 8-26 inches - Reddish brown, friable, channery loam.
- 26-60 inches - Reddish brown, firm, channery loam.

Mapping Units:

- 71B Lackawanna channery loam, 3 to 8 percent slopes, moderately eroded.
- 71C Lackawanna channery loam, 8 to 15 percent slopes, moderately eroded.
- 71D Lackawanna channery loam, 15 to 25 percent slopes, moderately eroded.
- 72B Lackawanna flaggy loam, 3 to 8 percent slopes.
- 72C Lackawanna flaggy loam, 8 to 15 percent slopes, moderately eroded.
- 73B Lackawanna very stony loam, 0 to 8 percent slopes.
- 73D Lackawanna very stony loam, 8 to 25 percent slopes.
- 73F Lackawanna and Bath very stony loams, 25 to 70 percent slopes.

LORDSTOWN SERIES

Lordstown soils are moderately deep, well drained soils on glaciated uplands. They have developed in loamy glacial deposits from gray and brown sandstone and shale. These gently sloping to very steep soils have moderate permeability. These soils contain many coarse fragments. Most use limitations are related to depth to bedrock, slope, and coarse fragments.

Major layers of a typical soil:

- 0-5 inches - Dark grayish brown, friable, channery silt loam.
- 5-26 inches - Yellowish brown, friable, channery silt loam.
- 26-30 inches - Grayish brown, friable, very channery loam.
- 30 inches + - Sandstone bedrock.

Mapping Units:

- 45B Lordstown channery silt loam, 3 to 8 percent slopes, moderately eroded.
- 45C Lordstown channery silt loam, 8 to 15 percent slopes, moderately eroded.
- 45D Lordstown channery silt loam, 15 to 25 percent slopes, moderately eroded.
- 147B Lordstown extremely stony silt loam, 0 to 8 percent slopes.
- 147D Lordstown extremely stony silt loam, 8 to 25 percent slopes.
- 46B Lordstown flaggy silt loam, 3 to 8 percent slopes.
- 46C Lordstown flaggy silt loam, 8 to 15 percent slopes, moderately eroded.

47B Lordstown very stony silt loam, 0 to 8 percent slopes.
47D Lordstown very stony silt loam, 8 to 25 percent slopes.
(Also mapped with Oquaga Series)

MARDIN SERIES

Mardin soils are deep, moderately well drained soils on glaciated uplands. They have developed in loamy glacial till from gray and brown sandstone and shale material. These gently sloping to moderately steep soils have a slowly permeable fragipan in the subsoil. The water table is high during wet seasons. These soils contain many coarse fragments. Most use limitations are related to the slow permeability, slope, and coarse fragments.

Major layers of a typical soil:

- 0-15 inches - Dark grayish brown, friable, channery silt loam.
- 15-21 inches - Mottled yellowish brown and gray, firm, channery silt loam.
- 21-70 inches - Mottled brown, olive brown and gray, very firm, channery loam.

Mapping Units:

- 55B Mardin channery silt loam, 3 to 8 percent slopes, moderately eroded.
- 55C Mardin channery silt loam, 8 to 15 percent slopes, moderately eroded.
- 55D Mardin channery silt loam, 15 to 25 percent slopes, moderately eroded.
- 157B Mardin extremely stony silt loam, 0 to 8 percent slopes.
- 157D Mardin extremely stony silt loam, 8 to 25 percent slopes.
- 56B Mardin flaggy silt loam, 3 to 8 percent slopes.
- 56C Mardin flaggy silt loam, 8 to 15 percent slopes, moderately eroded.
- 57B Mardin very stony silt loam, 0 to 8 percent slopes.
- 57D Mardin very stony silt loam, 8 to 25 percent slopes.

MIDDLEBURY SERIES

Middlebury soils are deep, moderately well drained to somewhat poorly drained soils on flood plains. They have developed in brownish to reddish loamy sediments eroded from glaciated uplands. These nearly level soils have subsoils that are moderately permeable. The water table is high during wet seasons. Most use limitations are related to flooding and the seasonal high water table.

Major layers of a typical soil:

- 0-11 inches - Dark grayish brown, friable, silt loam.
- 11-42 inches - Mottled brown and gray, friable, silt loam.
- 42-60 inches - Stratified sand and gravel.

Mapping Unit:

- 5 Middlebury silt loam.

MINE DUMP

This miscellaneous land type consists of deep, excessively drained, extremely acid waste materials of the coal mining industry. Mounds of these materials are locally called, "culm piles." The refuse originated from subsurface mining operations. It consists mostly of very dark colored, mixed, combustible, broken rock and coal, some of which is actively burning or has been burned. The burned material is of the nature of flaky shale and cinders. It is locally called, "red dog," and has a rusty red and white color. Mine dump is scattered throughout the mine activity area in the county. Slopes range from nearly level to very steep. This material is unstable on steep slopes and is a source of stream sediments. Use limitations are mostly related to combustibility, burning, acidity, poor stability, coarse fragments and slope.

Mapping Units:

- MD Mine dump.
- MB Mine dump, burning or burned.

MIXED ALLUVIAL LAND

This miscellaneous land type consists of recent water laid sediments within narrow stream channels. The soil materials are mixed and often erode during flooding. Many areas consist entirely of stones, gravel and cobbles. Other areas are free of coarse fragments. These materials constitute the flood plains of small drainageways. Depth and drainage of the soil materials varies in short lateral distances. Most use limitations are related to flooding and wetness.

Mapping Unit:

- 8 Mixed alluvial land.

MORRIS SERIES

Morris soils are deep, somewhat poorly drained soils on glaciated uplands. They have developed in glacial till from red sandstone and shale material. These nearly level to moderately steep soils have a slowly permeable fragipan in the subsoil. The water table is high during wet seasons. These soils contain many coarse fragments. Most use limitations are related to the seasonal high water table, slow permeability, slope and coarse fragments.

Major layers of a typical soil:

- 0-8 inches - Mottled dark brown and gray, friable, channery loam.
- 8-15 inches - Mottled reddish brown and yellow, friable, channery loam.
- 15-60 inches - Dark reddish gray, extremely firm, channery loam.

Mapping Units:

- 31A Morris channery loam, 0 to 3 percent slopes.
- 31B Morris channery loam, 3 to 8 percent slopes, moderately eroded.
- 31C Morris channery loam, 8 to 15 percent slopes, moderately eroded.
- 31D Morris channery loam, 15 to 25 percent slopes, moderately eroded.
- 133B Morris extremely stony loam, 0 to 8 percent slopes.
- 32B Morris flaggy loam, 3 to 8 percent slopes.
- 32C Morris flaggy loam, 8 to 15 percent slopes, moderately eroded.
- 33B Morris very stony loam, 0 to 8 percent slopes.
- 33D Morris very stony loam, 8 to 25 percent slopes.

MUCKY PEAT

Mucky peat consists of very poorly drained organic deposits formed from decomposed and partly decomposed reed, sedge and moss plant materials in bogs and swamps. In places, layers of mineral soil material occurs in the lower subsoil. In other places, a gray silty clay underlies the organic materials. Most use limitations are related to the high water table, acidity, poor stability, and bearing strength.

Mapping Unit:

- 97 Mucky peat.

NORWICH SERIES

Norwich soils are deep, very poorly drained soils in depressions and seep spots on glaciated uplands. They have developed in reddish glacial till from red sandstone and shale. These nearly level to gently sloping soils contain many coarse fragments and have a fragipan in the subsoil. The water table is at the surface most of the year. Most use limitations are related to slow permeability, the high water table and coarse fragments.

Major layers of a typical soil:

- 0-10 inches - Very dark gray, friable, channery silt loam.
- 10-21 inches - Mottled grayish brown and reddish brown, friable, channery silt loam.
- 21-60 inches - Mottled brown and dark reddish gray, firm, channery silt loam.

Mapping Units:

- 35A Norwich and Chippewa channery silt loams, 0 to 3 percent slopes.
- 35B Norwich and Chippewa channery silt loams, 3 to 8 percent slopes.
- 37B Norwich and Chippewa very stony silt loams, 0 to 8 percent slopes.

OQUAGA SERIES

Oquaga soils are moderately deep, well drained soils on glaciated uplands. They have developed in glacial till from red sandstone and shale material. These gently sloping to very steep soils have moderate permeability. These soils contain many coarse fragments. Most use limitations are related to depth to bedrock, slope and coarse fragments.

Major layers of a typical soil:

- 0-16 inches - Dark brown to reddish brown, friable, channery loam.
- 16-26 inches - Brown, friable, very channery loam.
- 26 inches + - Red sandstone and shale bedrock.

Mapping Units:

- 41B Oquaga channery loam, 3 to 8 percent slopes, moderately eroded.
- 41C Oquaga channery loam, 8 to 15 percent slopes, moderately eroded.
- 41D Oquaga channery loam, 15 to 25 percent slopes, moderately eroded.
- 143D Oquaga extremely stony loam, 8 to 25 percent slopes.
- 42B Oquaga flaggy loam, 3 to 8 percent slopes.
- 42C Oquaga flaggy loam, 8 to 15 percent slopes, moderately eroded.
- 43B Oquaga very stony loam, 0 to 8 percent slopes.
- 43D Oquaga very stony loam, 8 to 25 percent slopes.
- 43F Oquaga and Lordstown very stony loams, 25 to 70 percent slopes.

PAPAKATING SERIES

Papakating soils are deep, very poorly drained soils on flood plains. They have developed in gray and brown sediments eroded from glaciated uplands. Permeability is slow. These soils have a high water table most of the year and are subject to flooding. Most use limitations are related to the high water table and flooding.

Major layers of a typical soil:

- 0-12 inches - Mottled black and dark gray, friable, silt loam.
- 12-24 inches - Mottled grayish brown and gray, friable, silty clay loam.
- 24-60 inches - Mottled gray and brown, friable, silty clay loam.

Mapping Unit:

7 Papakating silt loam.

RED HOOK SERIES

Red Hook soils are deep, somewhat poorly drained soils on stream terraces. They have developed in waterlain materials from gray sandstone, siltstone and shale. Textures vary in the lower, crudely stratified gravelly and sandy substratum. These nearly level to gently sloping soils have a firm subsoil with slow permeability. Individual, lower coarse textured layers have rapid permeability. The water table is high during wet seasons. Most use limitations are related to the seasonal high water table and slow permeability.

Major layers of a typical soil:

- 0-14 inches - Mottled very dark gray and brown, very friable, loam.
- 14-22 inches - Mottled grayish brown and yellow, firm, gravelly loam.
- 22-60 inches - Mottled gray and brown, friable, stratified sand and gravel.

Mapping Units:

- 17A Red Hook loam, 0 to 3 percent slopes.
- 17B Red Hook loam, 3 to 8 percent slopes, moderately eroded.

RIVERWASH

This miscellaneous land type consists of recent deposits of gravel and cobblestones with varied amounts of thicknesses of sand, silt and clay soil materials in the voids between coarse fragments. These sites are along or within river channels, old river bends, and island shores. In some places, the material supports brushy type plants. Most use limitations are related to flooding and wetness.

Mapping Unit:

9 Riverwash

STRIP MINE SPOIL

This miscellaneous land type consists of deep soil materials of diverse texture and drainage. It is comprised of loamy, silty and stony soils materials formed by man in excavating materials to gain access to underground coal beds. It also includes the strip pit. Slopes range from nearly level to very steep. Due to the unvegetated nature and steepness, strip mine spoil is a source of

eroded soil sediments. Most use limitations are related to permeability, slope, acidity and coarse fragments.

Mapping Unit:

MS Strip mine spoil.

SWARTSWOOD SERIES

Swartswood soils are deep, well drained soils on glaciated uplands. They have developed in glacial till from gray and brown sandstone and conglomerate rock materials. These gently sloping to moderately steep soils have a firm fragipan in the lower subsoil. Permeability is moderate to moderately rapid. These soils contain many coarse fragments. Most use limitations are related to permeability, slope and coarse fragments.

Major layers of a typical soil:

0-10 inches - Dark brown, friable, channery loam.

10-30 inches - Strong brown to yellowish brown, very friable, gravelly sandy loam.

30-60 inches - Dark yellowish brown, very firm, gravelly sandy loam.

Mapping Units:

82B Swartswood channery loam, 3 to 8 percent slopes, moderately eroded.
82C Swartswood channery loam, 8 to 15 percent slopes, moderately eroded.
82D Swartswood channery loam, 15 to 25 percent slopes, moderately eroded.
184B Swartswood extremely stony loam, 0 to 8 percent slopes.
184D Swartswood extremely stony loam, 8 to 25 percent slopes.
84B Swartswood very stony loam, 0 to 8 percent slopes.
84D Swartswood very stony loam, 8 to 25 percent slopes.

TIOGA SERIES

Tioga soils are deep, well drained soils on flood plains. They have developed in waterlain sediments eroded from nearby glaciated uplands. These nearly level soils have moderate permeability. They have a stratified sand and gravel substratum. The soils on high bottom positions are subject to less frequent flooding than those of lower lying positions. Most use limitations are related to flooding.

Major layers of a typical soil:

0-10 inches - Dark grayish brown, friable, silt loam to fine sandy loam.

10-45 inches - Dark brown, friable, silt loam to fine sandy loam.

45-60 inches - Grayish brown, friable, stratified sand and gravel.

Mapping Units:

- 1 Tioga soils.
- 3 Tioga soils, high bottom.

UNADILLA SERIES

Unadilla soils are deep, well drained soils on terraces and uplands. They have developed in water-or-wind deposited materials generally less than six feet thick. These gently sloping to sloping soils have moderate permeability. Unvegetated Unadilla soils erode readily. Use limitations are mostly related to slope.

Major layers of a typical soil:

- 0-8 inches - Dark brown, very friable, silt loam.
- 8-40 inches - Dark brown, very friable, silt loam to very fine sandy loam.
- 40-60 inches - Light olive brown to dark brown, friable, gravelly loam to stratified sand and gravel.

Mapping Units:

- 14B Unadilla silt loam, 3 to 8 percent slopes.
- 14C Unadilla silt loam, 8 to 15 percent slopes.

URBAN LAND

This miscellaneous land type consists of filled, or otherwise altered areas of land where the natural soil material has been covered, removed, or destroyed by man in the building of villages, boroughs, cities or industrial developments. Urban land has extremely variable properties. It includes transported soil materials of glacial till and alluvium, and waste materials of all sorts. Precipitation is carried off through culvert systems. Where building has occurred on flood plains, flooding is a hazard. Other low lying areas are subject to flash local flooding due to increased runoff caused by urbanization. Most use limitations are related to slope and underlying soil characteristics.

Mapping Units:

- 100B Urban land, 0 to 8 percent slopes.
- 100D Urban land, 8 to 25 percent slopes.
- 101A Urban land, alluvial materials, 0 to 5 percent slopes.

VERY STONY LAND AND ROCK LAND

This miscellaneous land type consists of land having up to 90 percent stones, bedrock, and rock outcropping exposed on the surface. Other characteristics are subordinate to its stony and rocky nature. Slopes range from nearly level to very steep. Areas of this land type have been scraped of most of its soil cover by glaciation.

Mapping Units:

- | | |
|-----|--|
| 99D | Very stony land and Rock land, 0 to 25 percent slopes. |
| 99F | Very stony land and Rock land, 25 to 120 percent slopes. |

VOLUSIA SERIES

Volusia soils are deep, somewhat poorly drained soils on glaciated uplands. They have developed in glacial till from gray sandstone and shale rock materials. These nearly level to moderately steep soils have a slowly permeable fragipan at about 15 inches below the surface. The water table is high during wet seasons. These soils contain many coarse fragments. Use limitations are mostly related to the seasonal high water table, slow permeability, slope and coarse fragments.

Major layers of a typical soil:

- | | |
|--------------|--|
| 0-15 inches | - Dark grayish brown, friable, channery silt loam. |
| 15-40 inches | - Mottled yellowish brown and grayish brown, very firm, channery loam. |
| 40-60 inches | - Mottled olive brown and yellowish brown, very firm, channery loam. |

Mapping Units:

- | | |
|------|---|
| 61A | Volusia channery silt loam, 0 to 3 percent slopes. |
| 61B | Volusia channery silt loam, 3 to 8 percent slopes, moderately eroded. |
| 61C | Volusia channery silt loam, 8 to 15 percent slopes, moderately eroded. |
| 61D | Volusia channery silt loam, 15 to 25 percent slopes, moderately eroded. |
| 163B | Volusia extremely stony loam, 0 to 8 percent slopes. |
| 62B | Volusia flaggy silt loam, 3 to 8 percent slopes. |
| 62C | Volusia flaggy silt loam, 8 to 15 percent slopes, moderately eroded. |
| 63B | Volusia very stony silt loam, 0 to 8 percent slopes. |
| 63D | Volusia very stony silt loam, 8 to 25 percent slopes. |

WELLSBORO SERIES

Wellsboro soils are deep, moderately well drained soils on glaciated uplands. They have developed in reddish glacial till from red sandstone and shale rock materials. These gently sloping to moderately steep soils have a slowly permeable fragipan in the lower subsoil. The water table is high during wet seasons. These soils contain many coarse fragments. Most use limitations are related to slow permeability, slope and coarse fragments.

Major layers of a typical soil:

- 0-10 inches - Dark brown, friable, channery loam.
- 10-21 inches - Reddish brown, friable, channery loam.
- 21-60 inches - Mottled dark reddish brown and yellowish brown, very firm, channery loam.

Mapping Units:

- 75B Wellsboro channery loam, 3 to 8 percent slopes, moderately eroded.
- 75C Wellsboro channery loam, 8 to 15 percent slopes, moderately eroded.
- 75D Wellsboro channery loam, 15 to 25 percent slopes, moderately eroded.
- 76B Wellsboro flaggy loam, 3 to 8 percent slopes.
- 76C Wellsboro flaggy loam, 8 to 15 percent slopes, moderately eroded.
- 77B Wellsboro very stony loam, 0 to 8 percent slopes.
- 77D Wellsboro very stony loam, 8 to 25 percent slopes.

WILLIAMSON SERIES

Williamson soils are deep, moderately well drained soils on terraces and uplands. They have developed in brown and yellowish brown water-or-wind deposited silts and very fine sands. These gently sloping soils have slowly permeable fragipan 20 inches below the surface. The water table is high during the wet seasons. Unvegetated and disturbed, Williamson soils erode readily. Most use limitations are related to slow permeability and to the seasonal high water table.

Major layers of a typical soil:

- 0-20 inches - Dark grayish brown to yellowish brown, friable, silt loam.
- 20-48 inches - Mottled brown and yellowish brown, firm, silt loam.
- 48-60 inches - Dark brown, firm, layers silt and very fine sand.

Mapping Unit:

- 114B Williamson silt loam, 3 to 8 percent slopes.

WURTSBORO SERIES

Wurtsboro soils are deep, moderately well drained soils on glaciated uplands. They have developed in brown and gray, glacial till from conglomerate and sandstone rock materials. These gently sloping to moderately steep soils have a moderately slowly permeable fragipan in the subsoil. The water table is high during wet seasons. These soils contain many coarse fragments. Use limitations are mostly related to restricted permeability, the seasonal high water table, slope and coarse fragments.

Major layers of a typical soil:

- 0-18 inches - Dark brown, friable, channery loam.
- 18-36 inches - Yellowish brown, firm, gravelly fine sandy loam.
- 36-58 inches - Brown, very firm, gravelly fine sandy loam.

Mapping Units:

- 86B Wurtsboro channery loam, 3 to 8 percent slopes, moderately eroded.
- 86C Wurtsboro channery loam, 8 to 15 percent slopes, moderately eroded.
- 188B Wurtsboro extremely stony loam, 0 to 8 percent slopes.
- 87B Wurtsboro flaggy loam, 3 to 8 percent slopes.
- 87C Wurtsboro flaggy loam, 8 to 15 percent slopes, moderately eroded.
- 88B Wurtsboro very stony loam, 0 to 8 percent slopes.
- 88D Wurtsboro very stony loam, 8 to 25 percent slopes.

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 1 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES MAPPED ^{1/}
1	Tioga soils	
3	Tioga soils, high bottom	
5	Middlebury silt loam	
6	Holly silt loam	
7	Papakating silt loam	
8	Mixed alluvial land	
9	Riverwash	
13A	Alton gravelly sandy loam, 0 to 3 percent slopes	
13-A-1	(Combined with 13A)	
13B	Alton gravelly sandy loam, 3 to 8 percent slopes, moderately eroded	
13-B-1	(Combined with 13B)	
13-B-2	(Combined with 13B)	
13C	Alton gravelly sandy loam, 8 to 15 percent slopes, moderately eroded	
13-C-1	(Combined with 13C)	
13-C-2	(Combined with 13C)	
13D	Alton gravelly sandy loam, 15 to 25 percent slopes, moderately eroded	
13-D-1	(Combined with 13D)	
13-D-2	(Combined with 13D)	
13-E-1	(Combined with 13F)	
13-E-2	(Combined with 13F)	
13F	Alton gravelly sandy loam, 25 to 75 percent slopes, moderately eroded	
14-A-1	(Combined with 13A)	
14B	Unadilla silt loam, 3 to 8 percent slopes	
14-B-2	(Combined with 13B)	
14C	Unadilla silt loam, 8 to 15 percent slopes	
16A	Braceville gravelly loam, 0 to 3 percent slopes	
16-A-1	(Combined with 16A)	
16B	Braceville gravelly loam, 3 to 8 percent slopes, moderately eroded	
16-B-1	(Combined with 16B)	
16-B-2	(Combined with 16B)	
17A	Red Hook loam, 0 to 3 percent slopes	
17-A-1	(Combined with 17A)	
17B	Red Hook loam, 3 to 8 percent slopes, moderately eroded	
18A	Atherton loam	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 2 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES MAPPED ^{1/}
18-A-1	(Combined with 18A)	
21B		
21-B-2	(Combined with 71B)	
21C		
21-C-2	(Combined with 71C)	
21D		
21-D-2	(Combined with 71D)	
22B		
22-B-1		
22-B-2	(Combined with 72B)	
22C		
22-C-1		
22-C-2	(Combined with 72C)	
22D		
22-D-2	(Combined with 71D)	
22-E-2	(Combined with 73F)	
23-AB-1		
23B	(Combined with 73B)	
23-CD-1		
23D	(Combined with 73D)	
23-EF-1		
23F	(Combined with 73F)	
24-A-1		
24-B-1		
24-B-2	(Combined with 71B)	
24-C-1		
24-C-2	(Combined with 71C)	
25B		
25-B-2	(Combined with 75B)	
25C		
25-C-2	(Combined with 75C)	
25-C-3		
25D		
25-D-2		
25-D-3	(Combined with 75D)	
26B		
26-B-1		
26-B-2	(Combined with 76B)	
26C		
26-C-1		
26-C-2	(Combined with 76C)	
26D		
26-D-2	(Combined with 75D)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 3 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES ¹ / _{MAPPED}
27-AB-1 27B	(Combined with 77B)	
27-CD-1 27D	(Combined with 77D)	
28-B-2	(Combined with 75B)	
28-C-2	(Combined with 75C)	
28-D-2	(Combined with 75D)	
31A	Morris channery loam, 0 to 3 percent slopes	
31-A-1	(Combined with 31A)	
31B	Morris channery loam, 3 to 8 percent slopes, moderately eroded	
31-B-1 31-B-2	(Combined with 31B)	
31C	Morris channery loam, 8 to 15 percent slopes, moderately eroded	
31-C-1 31-C-2	(Combined with 31C)	
31D	Morris channery loam, 15 to 25 percent slopes, moderately eroded	
31-D-2	(Combined with 31D)	
32A 32-A-1	(Combined with 31A)	
32B	Morris flaggy loam, 3 to 8 percent slopes	
32-B-1 32-B-2	(Combined with 32B)	
32C	Morris flaggy loam, 8 to 15 percent slopes, moderately eroded	
32-C-1 32-C-2	(Combined with 32C)	
32D 32-D-2	(Combined with 31D)	
33B	Morris very stony loam, 0 to 8 percent slopes	
33-AB-1 33-AB-2	(Combined with 33B)	
33-CD-1	(Combined with 33D)	
33D	Morris very stony loam, 8 to 25 percent slopes	
35A	Norwich and Chippewa channery silt loams, 0 to 3 percent slopes	
35-A-1	(Combined with 35A)	
35B	Norwich and Chippewa channery silt loams, 3 to 8 percent slopes	
35-B-1	(Combined with 35B)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 4 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES MAPPED <u>1</u> /
37-AB-1	(Combined with 37B)	
37B	Norwich and Chippewa very stony silt loams, 0 to 8 percent slopes	
41-A-1	(Combined with 41B)	
41B	Oquaga channery loam, 3 to 8 percent slopes, moderately eroded	
41-B-2	(Combined with 41B)	
41C	Oquaga channery loam, 8 to 15 percent slopes, moderately eroded	
41-C-2	(Combined with 41C)	
41D	Oquaga channery loam, 15 to 25 percent slopes, moderately eroded	
41-D-2	(Combined with 41D)	
42B	Oquaga flaggy loam, 3 to 8 percent slopes	
42-B-1		
42-B-2	(Combined with 42B)	
42C	Oquaga flaggy loam, 8 to 15 percent slopes, moderately eroded	
42-C-2	(Combined with 42C)	
42D		
42-D-2	(Combined with 41D)	
43-AB-1	(Combined with 43B)	
43B	Oquaga very stony loam, 0 to 8 percent slopes	
43-CD-1	(Combined with 43D)	
43D	Oquaga very stony loam, 8 to 25 percent slopes	
43-EF-1	(Combined with 43F)	
43F	Oquaga and Lordstown very stony loams, 25 to 70 percent slopes	
44-B-2	(Combined with 41B)	
44-C-2		
44-C-3	(Combined with 41C)	
44-D-2		
44-D-3	(Combined with 41D)	
45B	Lordstown channery silt loam, 3 to 8 percent slopes, moderately eroded	
45-B-2	(Combined with 45B)	
45C	Lordstown channery silt loam, 8 to 15 percent slopes, moderately eroded	
45-C-2		
45-C-3	(Combined with 45C)	
45D	Lordstown channery silt loam, 15 to 25 percent slopes, moderately eroded	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE 1

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 5 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES <u>1</u> MAPPED
45-D-2	(Combined with 45D)	
45-D-3		
45-E-2	(Combined with 43F)	
46-A-1	(Combined with 46B)	
46B	Lordstown flaggy silt loam, 3 to 8 percent slopes	
46-B-2	(Combined with 46B)	
46C	Lordstown flaggy silt loam, 8 to 15 percent slopes, moderately eroded	
46-C-2	(Combined with 46C)	
46D	(Combined with 45D)	
46-D-2	(Combined with 45D)	
46-E-2	(Combined with 43F)	
47-AB-1	(Combined with 47B)	
47B	Lordstown very stony silt loam, 0 to 8 percent slopes	
47-CD-1	(Combined with 47D)	
47D	Lordstown very stony silt loam, 8 to 25 percent slopes	
47-EF-1	(Combined with 43F)	
47F	(Combined with 43F)	
48B	Arnot rocky silt loam, 3 to 8 percent slopes, moderately eroded	
48-B-2	(Combined with 48B)	
48-B-3		
48C	Arnot rocky silt loam, 8 to 15 percent slopes, moderately eroded	
48-C-2	(Combined with 48C)	
48-C-3		
48-CD-1	(Combined with 50D)	
48D	Arnot rocky silt loam, 15 to 25 percent slopes, moderately eroded	
48-D-2	(Combined with 48D)	
48-D-3		
48-E-3	(Combined with 50F)	
48-EF-1		
48-EF-2		
49-B-2	(Combined with 48B)	
49-C-2	(Combined with 48C)	
49-C-3	(Combined with 48C)	
49-D-2	(Combined with 48D)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 6 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES MAPPED <u>1</u>
49-E-2 49-F-2	(Combined with 50F)	
50B	Arnot very rocky silt loam, 0 to 8 percent slopes	
50D	Arnot very rocky silt loam, 8 to 25 percent slopes	
50F	Arnot very rocky silt loam, 25 to 70 percent slopes	
51B	Bath channery silt loam, 3 to 8 percent slopes, moderately eroded	
51-B-2	(Combined with 51B)	
51C	Bath channery silt loam, 8 to 15 percent slopes, moderately eroded	
51-C-2	(Combined with 51C)	
51D	Bath channery silt loam, 15 to 25 percent slopes, moderately eroded	
51-D-2	(Combined with 51D)	
52B	Bath flaggy silt loam, 3 to 8 percent slopes	
52-B-1 52-B-2	(Combined with 52B)	
52C	Bath flaggy silt loam, 8 to 15 percent slopes, moderately eroded	
52-C-2	(Combined with 52C)	
52D 52-D-2	(Combined with 51D)	
53-AB-1	(Combined with 53B)	
53B	Bath very stony silt loam, 0 to 8 percent slopes	
53-CD-1	(Combined with 53D)	
53D	Bath very stony silt loam, 8 to 25 percent slopes	
53F	(Combined with 73F)	
55-A-1	(Combined with 55B)	
55B	Mardin channery silt loam, 3 to 8 percent slopes, moderately eroded	
55-B-2	(Combined with 55B)	
55C	Mardin channery silt loam, 8 to 15 percent slopes, moderately eroded	
55-C-2	(Combined with 55C)	
55D	Mardin channery silt loam, 15 to 25 percent slopes, moderately eroded	
55-D-2	(Combined with 55D)	
56B	Mardin flaggy silt loam, 3 to 8 percent slopes	
56-B-1 56-B-2	(Combined with 56B)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 7 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES MAPPED <u>1</u>
56C	Mardin flaggy silt loam, 8 to 15 percent slopes, moderately eroded	
56-C-1	(Combined with 56C)	
56-C-2		
56D		
56-D-2	(Combined with 55D)	
57-AB-1	(Combined with 57B)	
57B	Mardin very stony silt loam, 0 to 8 percent slopes	
57-CD-1	(Combined with 57D)	
57D	Mardin very stony silt loam, 8 to 25 percent slopes	
57Z-AB-1		
57Z-CD-1	(Combined with 88B)	
61A	Volusia channery silt loam, 0 to 3 percent slopes	
61-A-1	(Combined with 61A)	
61B	Volusia channery silt loam, 3 to 8 percent slopes, moderately eroded	
61-B-1		
61-B-2	(Combined with 61B)	
61C	Volusia channery silt loam, 8 to 15 percent slopes, moderately eroded	
61-C-1		
61-C-2	(Combined with 61C)	
61D	Volusia channery silt loam, 15 to 25 percent slopes, moderately eroded	
61-D-2	(Combined with 61D)	
62A	(Combined with 61A)	
62B	Volusia flaggy silt loam, 3 to 8 percent slopes	
62-B-1		
62-B-2	(Combined with 62B)	
62C	Volusia flaggy silt loam, 8 to 15 percent slopes, moderately eroded	
62-C-1		
62-C-2	(Combined with 62C)	
62D	(Combined with 61D)	
63-AB-1	(Combined with 63B)	
63B	Volusia very stony silt loam, 0 to 8 percent slopes	
63-CD-1	(Combined with 63D)	
63D	Volusia very stony silt loam, 8 to 25 percent slopes	
65A	(Combined with 35A)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 8 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES <u>1</u> / MAPPED
65B	(Combined with 35B)	
67B		
68-AB-1	(Combined with 37B)	
71B	Lackawanna channery loam, 3 to 8 percent slopes, moderately eroded	
71-B-2	(Combined with 71B)	
71C	Lackawanna channery loam, 8 to 15 percent slopes, moderately eroded	
71-C-2	(Combined with 71C)	
71D	Lackawanna channery loam, 15 to 25 percent slopes, moderately eroded	
71-D-2	(Combined with 71D)	
72B	Lackawanna flaggy loam, 3 to 8 percent slopes	
72C	Lackawanna flaggy loam, 8 to 15 percent slopes, moderately eroded	
72D	(Combined with 71D)	
73-AB-1	(Combined with 73B)	
73B	Lackawanna very stony loam, 0 to 8 percent slopes	
73-CD-1	(Combined with 73D)	
73D	Lackawanna very stony loam, 8 to 25 percent slopes	
73F	Lackawanna and Bath very stony loams, 25 to 70 percent slopes	
75B	Wellsboro channery loam, 3 to 8 percent slopes, moderately eroded	
75-B-2	(Combined with 75B)	
75C	Wellsboro channery loam, 8 to 15 percent slopes, moderately eroded	
75-C-2	(Combined with 75C)	
75D	Wellsboro channery loam, 15 to 25 percent slopes, moderately eroded	
75-D-2	(Combined with 75D)	
76B	Wellsboro flaggy loam, 3 to 8 percent slopes	
76-B-1		
76-B-2	(Combined with 76B)	
76C	Wellsboro flaggy loam, 8 to 15 percent slopes, moderately eroded	
76-C-1		
76-C-2	(Combined with 76C)	
76D	(Combined with 75D)	
77-AB-1	(Combined with 77B)	
77B	Wellsboro very stony loam, 0 to 8 percent slopes	
77-CD-1	(Combined with 77D)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 9 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES MAPPED <u>1</u>
77D	Wellsboro very stony loam, 8 to 25 percent slopes	
82B	Swartswood channery loam, 3 to 8 percent slopes, moderately eroded	
82-B-2	(Combined with 82B)	
82C	Swartswood channery loam, 8 to 15 percent slopes, moderately eroded	
82-C-2	(Combined with 82C)	
82D	Swartswood channery loam, 15 to 25 percent slopes, moderately eroded	
82-D-2	(Combined with 82D)	
83-B-1	(Combined with 82B)	
83-C-2	(Combined with 82C)	
83-D-2	(Combined with 82D)	
84-AB-1	(Combined with 84B)	
84B	Swartswood very stony loam, 0 to 8 percent slopes	
84-CD-1	(Combined with 84D)	
84D	Swartswood very stony loam, 8 to 25 percent slopes	
86-A-1	(Combined with 86B)	
86B	Wurtsboro channery loam, 3 to 8 percent slopes, moderately eroded	
86-B-2	(Combined with 86B)	
86C	Wurtsboro channery loam, 8 to 15 percent slopes, moderately eroded	
86-C-2		
86-D-2	(Combined with 86C)	
87-AB-1	(Combined with 88B)	
87B	Wurtsboro flaggy loam, 3 to 8 percent slopes	
87-B-1	(Combined with 87B)	
87C	Wurtsboro flaggy loam, 8 to 15 percent slopes, moderately eroded	
87-C-2	(Combined with 87C)	
87-CD-1		
88-AB-1	(Combined with 88B)	
88B	Wurtsboro very stony loam, 0 to 8 percent slopes	
88-CD-1	(Combined with 88D)	
88D	Wurtsboro very stony loam, 8 to 25 percent slopes	
97	Mucky peat	
97A	(Combined with 97)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE 1

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 10 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES ^{1/} MAPPED
99-ABCD-1 99-AD	(Combined with 99D)	
99D	Very stony land and rock land, 0 to 25 percent slopes	
99-EF 99-EF-1	(Combined with 99F)	
99F	Very stony land and rock land, 25 to 120 percent slopes	
100B	Urban land, 0 to 8 percent slopes	
100D	Urban land, 8 to 25 percent slopes	
101A	Urban land, alluvial materials, 0 to 5 percent slopes	
114B	Williamson silt loam, 3 to 8 percent slopes	
127-AB-1 127B	(Combined with 77B)	
127-CD-1 127D	(Combined with 77D)	
133-AB-1	(Combined with 133B)	
133B	Morris extremely stony loam, 0 to 8 percent slopes	
133-CD-1	(Combined with 33D)	
143-AB-1 143B	(Combined with 43B)	
143-CD-1	(Combined with 143D)	
143D	Oquaga extremely stony loam, 8 to 25 percent slopes	
143-EF-1 143F	(Combined with 43F)	
147-AB-1	(Combined with 147B)	
147B	Lordstown extremely stony silt loam, 0 to 8 percent slopes	
147-CD-1	(Combined with 147D)	
147D	Lordstown extremely stony silt loam, 8 to 25 percent slopes	
147-EF-1 147F	(Combined with 43F)	
153B	Bath extremely stony silt loam, 0 to 8 percent slopes	
153D	Bath extremely stony silt loam, 8 to 25 percent slopes	
157B	Mardin extremely stony silt loam, 0 to 8 percent slopes	
157D	Mardin extremely stony silt loam, 8 to 25 percent slopes	
163-AB-1	(Combined with 163B)	
163B	Volusia extremely stony loam, 0 to 8 percent slopes	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE 1

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 11 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES <u>1</u> / MAPPED
184B	Swartswood extremely stony loam, 0 to 8 percent slopes	
184D	Swartswood extremely stony loam, 8 to 25 percent slopes	
188B	Wurtsboro extremely stony loam, 0 to 8 percent slopes	
241B		
241-B-2	(Combined with 48B)	
241C		
241-C-2	(Combined with 48C)	
241D		
241-D-2	(Combined with 48D)	
243-AB-1		
243B	(Combined with 50B)	
243-CD-1		
243D	(Combined with 50D)	
243-EF-1		
243F	(Combined with 50F)	
251A	(Combined with 35A)	
251-A-1		
251B		
251-B-1	(Combined with 35B)	
251-C-1		
251-C-2	(Combined with 61C)	
253-AB-1		
253B	(Combined with 37B)	
347-A-1	(Combined with 16A)	
348A	Birdsall silt loam	
348-A-1	(Combined with 348A)	
MA-AB	(Combined with 101A)	
MB	Mine dump, burning or burned	
MBC	(Combined with MB)	
MBF	(Combined with MB)	
MD	Mine dump	
MD-ABC	(Combined with MD)	
MD-B-ABC		
MD-B-DEF	(Combined with MB)	
MDC		
MD-DEF		
MD-F	(Combined with MD)	

NUMERICAL LEGEND AND ACRES MAPPED

TABLE I

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 12 OF 12

MAP SYMBOL	TENTATIVE SOIL NAME	ACRES MAPPED <u>1/</u>
ML-AB ML-CD	(Combined with 100B)	
MS	Strip mine spoil	
MS-AB MSB MS-CD MSD MS-EF MSF	(Combined with MS)	
MW MW-A	(Combined with MD)	
<u>1/</u> Acreage figures will be contained in Volume II.		

GENERAL SOIL MAP

The general soil map shows the soil association in Lackawanna County. A soil association is a landscape that has a distinctive proportional pattern of soils. It normally consists of one or more major soils and at least one minor soil, and it is named for the major soils. The soils in any one association may occur in another association, but in a different pattern.

A map showing soil associations is useful to people who want a general idea of the soils in a county, who want to compare different parts of the county, or who want to know the location of large tracts that are suitable for a certain kind of farming or other land use. Such a map is not suitable for planning the management of a farm or field, because the soils in any one association ordinarily differ in depth, stoniness, drainage, or other characteristics that affect management.

Descriptions of the ten soil associations in Lackawanna County are given below:

VERY STONY LAND-ARNOT-LORDSTOWN ASSOCIATION: This association consists of nearly level to very steep, shallow and moderately deep, well drained grayish brown soils and land type on the mountain plateaus and ridges, principally in the southwest part of the county in the Moosic mountains and near Bald mountain. Extensive areas of rock outcrop are common.

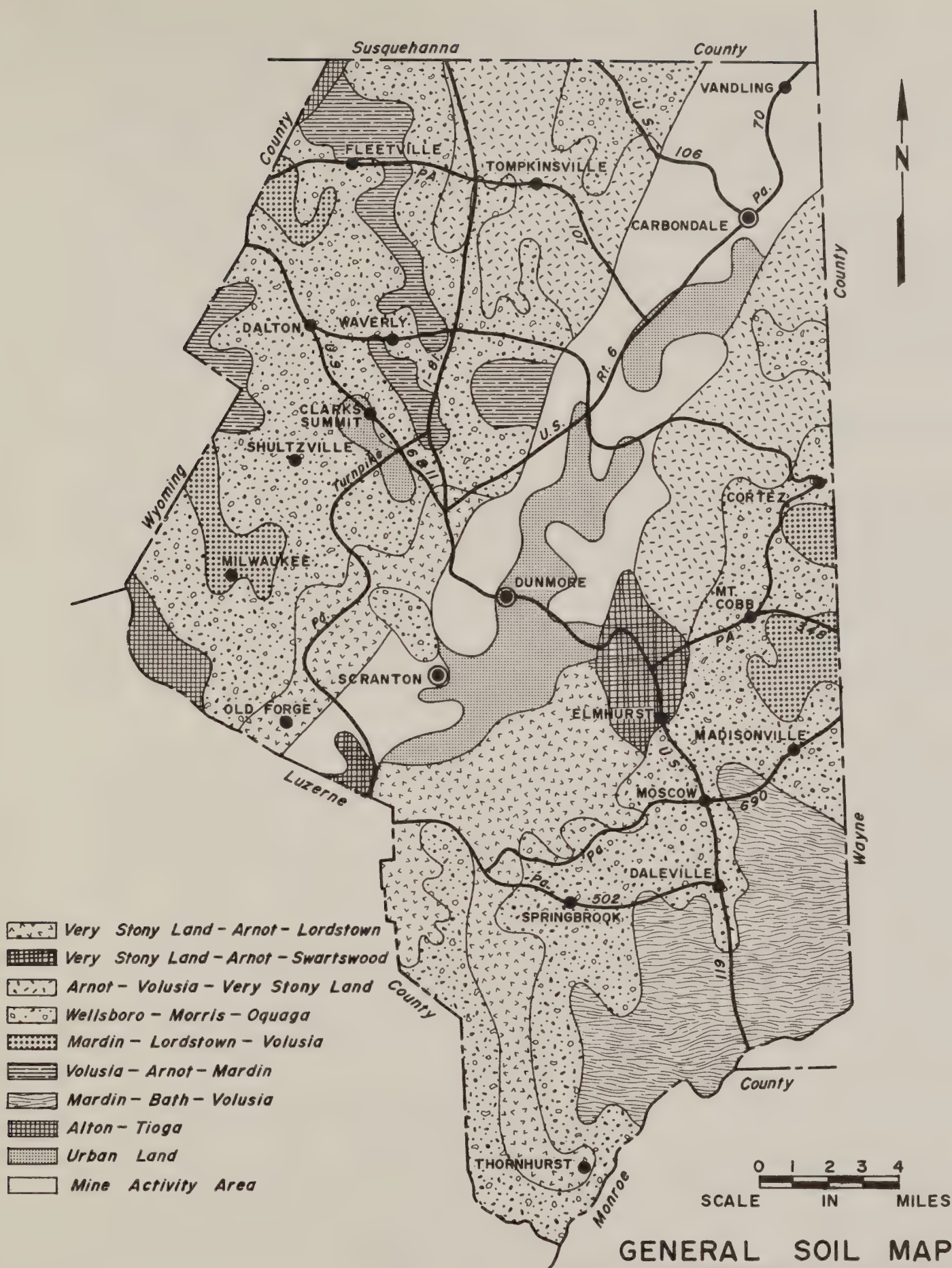
Very stony land makes up 50 percent of this association. It is mostly on mountain tops and on very steep rock ledges. Arnot soils make up 23 percent of this association. These are shallow soils on mountain tops and adjoining slopes. Lordstown soils make up 7 percent of this association. These are moderately deep soils. Most extensive of the minor soils in the association are Volusia, Mardin, Wurtsboro and Bath.

Most of this association is used as woodland or for wildlife and recreation.

VERY STONY LAND-ARNOT-SWARTSWOOD ASSOCIATION: This association consists of nearly level to very steep, shallow to deep, well drained, dark brown and grayish brown soils and land types on the mountain plateaus, ridges, and foot slopes in the Moosic mountains and near Elmhurst and Moosic. Extensive areas of rock outcrops and bedrock escarpments are common.

Very stony land makes up 41 percent of this association. It is mostly on mountain tops and on very steep rock ledges. Arnot soils make up 34 percent of this association. These are shallow soils on mountain tops and adjoining slopes. Swartswood soils make up 21 percent of this association. These deep soils are on broad, dissected, lower slopes. Most extensive of the minor soils in the association are Volusia and Lordstown, with smaller areas of Alton, Tioga and Middlebury.

Most of this association is in woodland. The areas bordering the Roaring Brook are cultivated or in pasture.



GENERAL SOIL MAP

LACKAWANNA COUNTY PENNSYLVANIA

PREPARED BY:

Lackawanna County Regional Planning Commission
&

U.S. Dept. Of Agriculture Soil Conservation Service

The preparation of the map was financed in part through a comprehensive planning grant from the Department of Housing and Urban Development, under the provision of Section 701 of the Housing Act of 1954, as amended and as administered by the Bureau of Planning Pennsylvania Department of Community Affairs.

ARNOT-VOLUSIA-VERY STONY LAND ASSOCIATION: This association consists of nearly level to very steep, shallow to deep, well drained to somewhat poorly drained, grayish brown soils, and miscellaneous land type on rolling hills and mountain tops and adjacent slopes southeast of Carbondale and in the vicinity of Tompkinsville. Mountain plateaus with numerous rock outcrops and bedrock escarpments are typical features of the landscape. Numerous reservoirs are located in stream channels of this area.

Arnot soils make up 36 percent of this association. These are shallow soils less than 20 inches deep to bedrock. Volusia soils make up 23 percent of this association. These soils are generally on the lower slopes and are subject to surface runoff from the adjoining higher slopes. Very stony land makes up 23 percent of this association. Most of this land type is on the mountain tops, ridges and escarpments. Minor soils in the association are Wurtsboro, Lordstown, Mardin and Swartswood.

Most of this association is used as woodland with small areas in cropland, pasture and apple orchards.

WELLSBORO-MORRIS-OQUAGA ASSOCIATION: This association consists of nearly level to very steep, deep, moderately well drained and somewhat poorly drained dark brown soils, and moderately deep, well drained reddish soils on rolling hills and mountain side slopes scattered throughout the county. Nearly level to moderately steep ridges and mountain sides in the west, with less uniform slopes and higher ridges in the south, are typical of this association. The association has numerous streams and reservoirs or lakes and ponds. The larger lakes and ponds are in the northern part of the county near the adjoining Susquehanna County.

Wellsboro soils make up 32 percent of this association. These soils are on the higher convex slopes. Morris soils make up 12 percent of this association. These soils are principally in the lower sloping areas and subject to much surface water runoff accumulation. Oquaga soils make up 11 percent of this association. They occupy the higher mountain slopes and are moderately deep to bedrock. Rock outcrops are common. Most extensive minor soils in this association are Arnot, Lackawanna, Norwich and Chippewa.

In the western, northern and eastern portions, this association is mainly in cropland and pasture. Woodland occupies about one fourth of the western, eastern and northern portions, while the remaining areas are rural or urbanized. The southern portion of this association is mostly in woodland with small areas cleared and cultivated.

MARDIN-LORDSTOWN-VOLUSIA ASSOCIATION: This association consists of nearly level to moderately steep, moderately deep and deep, well drained to somewhat poorly drained grayish brown soils of dissected uplands. This association occurs as scattered, finger-like projections in the west, northwest and eastern portions of the county. Uplands and mountain plateaus, dissected by streams are typical of this association. Floodplains of most streams are narrow. The eastern area has many wet depressions.

Mardin soils make up 33 percent of this association. These soils occur on the more convex slopes of the landscape. Lordstown soils make up 30 percent of this association. These soils are on the higher elevations. They are moderately deep to bedrock and contain numerous rock outcrops. Water seeps and springs are common on the steeper slopes. Volusia soils make up 21 percent of this association. These are mostly nearly level to gently sloping soils on the lower portions of the landscape. Surface runoff water tends to accumulate on these soils. Most extensive of the minor soils are Arnot, Bath, Alton and Holly.

Land use is about equally divided between cropland and woodland.

VOLUSIA-ARNOT-MARDIN ASSOCIATION: This association consists of nearly level to moderately steep, shallow to deep, well drained to somewhat poorly drained grayish brown soils of dissected rolling uplands. It is in a narrow discontinuous band in the northwestern part of the county.

Volusia soils make up 37 percent of this association. These soils are on the sloping to nearly level areas where surface water runoff tends to accumulate. Arnot soils make up 22 percent of this association. These soils are on the higher convex positions in the landscape where the soil is less than 20 inches deep over bedrock. Rock outcropping is frequent. Mardin soils make up 20 percent of this association. These are sloping soils on the more convex slopes. They are less subject to accumulation of surface water runoff than Volusia soils. Most extensive of the minor soils are Lordstown, Bath and Wurtsboro.

Most of this association is used for cropland with lesser amounts in woodland.

MARDIN-BATH-VOLUSIA ASSOCIATION: This association consists of gently sloping to moderately steep, deep, well drained to somewhat poorly drained stony soils of dissected rolling uplands of the glaciated low plateau of the southeast part of the county. This association contains many streams and low circular depressions.

Mardin soils make up 35 percent of this association. In some places these soils are subject to accumulation of moderate amounts of surface water runoff. Bath soils make up 25 percent of this association. These soils are scattered throughout the area at the higher elevation. Volusia soils make up 15 percent of this association. These soils are predominantly on the lower sloping areas near depressions. They are subject to surface water runoff accumulation. Most extensive of the minor soils are Arnot, Lordstown, Swartswood and Wurtsboro.

Most of this association is in woodland.

ALTON-TIOGA ASSOCIATION: This association consists of nearly level to very steep, deep, well drained soils of floodplains and terraces near the river and major creeks of the western portions of the county. Alton soils make up

60 percent of this association. These soils are on the terrace and kame-kettle formations above the floodplain. Tioga soils make up 24 percent of this association. These soils are on the floodplains. Most extensive of the minor soils are Middlebury, Oquaga and Wellsboro.

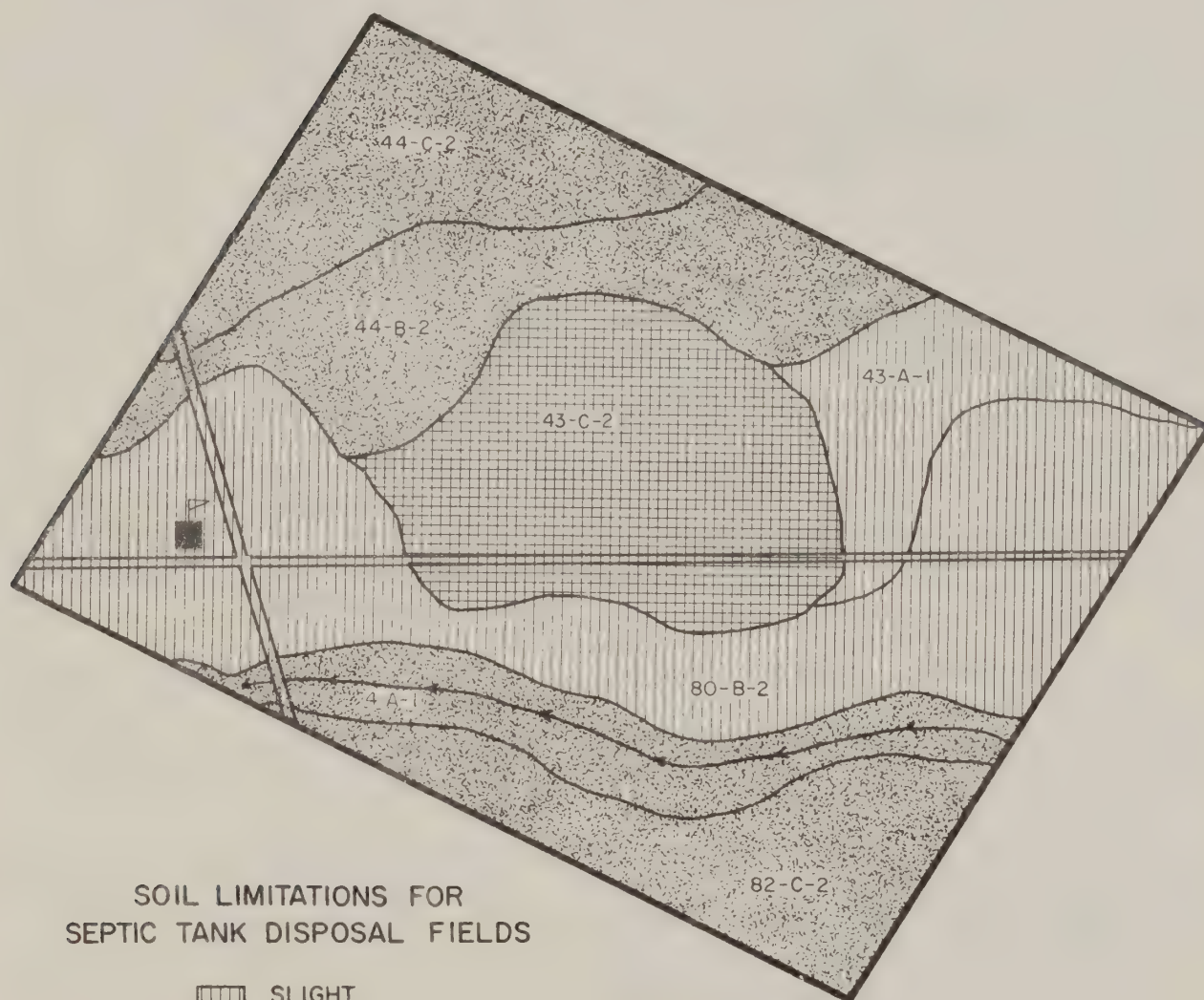
URBAN LAND ASSOCIATION: This association consists of land used for housing developments, shopping centers, public facilities, roads and railroads. Few areas exist where the natural soil has not been built upon, dug out, or otherwise disturbed.

MINE ACTIVITY AREA ASSOCIATION: This association consists of areas disturbed during surface strip mining operations, and mine dumps created during coal breaker operations. It is located in the Lackawanna Valley and bordering ridges. Long troughs or pits with the stripped soil and bedrock materials placed as a berm along the edge of the pits or dumped in cone-shaped forms within the larger pits, as well as mounds of carbonaceous materials, and burned or burning carbonaceous mounds scattered throughout this area, typify this association.




Strip mine spoil makes up 71 percent of this association. Most of the lower sloping areas have revegetated naturally to trees or grasses. The higher, steeper slopes remain unvegetated. Mine dump makes up 26 percent of this association. This mixed, carbonaceous material of coal and shaly rock fragments may have some small size birch trees growing in them. This provides the only vegetative cover. Mine dump, burning or burned, makes up 3 percent of the association. These are mounds of carbonaceous material that are burning or have been burned. The hue of this material is red, distinguishing it from the black carbonaceous mine dumps. This material remains unvegetated.

SECTION II

SOIL INTERPRETATIONS



SOIL LIMITATIONS FOR
SEPTIC TANK DISPOSAL FIELDS

-  SLIGHT
-  MODERATE
-  SEVERE

SECTION II

SOIL INTERPRETATIONS AND THEIR USE

This section contains soil interpretations for Engineering, Community Development, Recreation, Cropland, Wildlife and Woodland. Soil interpretations are useful in evaluating sites for a specific use. Interpretations enable a user to select soil areas most suitable for a particular use and to predict the type and degree of problems likely to be encountered. They also are useful in determining the kind and amount of on-site investigations needed, thereby permitting adequate soil investigations at minimum cost.

The user is cautioned that the suitability ratings, degree of limitations and other interpretations are based on the typical soil in each mapping unit. At any given point the actual conditions may differ from the information presented here because of the inclusion of other soils which were impractical to map separately at the scale of mapping used. On-site investigations are suggested where the proposed soil use involves heavy loads, deep excavations, or high costs.

ESTIMATED SOIL PROPERTIES

Table 2, Estimated Soil Properties Significant to Engineering, evaluates those soil properties considered most significant to engineering uses of soils. This information is the basis for making many of the interpretations in this report.

Estimates in Table 2 are made for the typical profile in each soil series, with each profile divided into layers significant to engineering. These estimates are based on engineering test data, field observations, past experiences in engineering construction and detailed examination of the soils.

These estimates should be useful in planning detailed investigations at proposed construction sites. They can be useful in assisting the engineer to concentrate on the more suitable soils and thus reduce the number of soil samples needed for laboratory testing.

A brief explanation of the column headings in Table 2 is given in the following paragraphs. Most of these items are also defined in the Glossary in the back of this volume.

Depth to Seasonal High Water Table

This is the depth in feet from the surface to a seasonally high water table. During the year, free water saturates most soils to varying depths. This depth is determined largely by soil colors. The duration of the water table at a given level varies with the season and is not considered in this column.

Depth to Bedrock

The depth in feet from the surface to bedrock is indicated in this column.

Depth from Surface

This column indicates the depth at which the various soil layers occur. The layers indicated are fairly typical of the layers in all the soils of any one series. Soil properties for all the remaining columns are listed for each of these layers except, in some cases, for the topsoil layer.

Percentage Passing Sieve (Sieve Analysis)

In these columns are given the estimated percentages of the soil in each significant soil layer that will pass through (is smaller than) each particular sieve. These figures serve as a basis for estimating the engineering classification.

Engineering Classification

These two columns show the engineering classification of soils as determined by estimates of sieve analysis, plasticity index and liquid limit. The two systems of engineering classification are the Unified Soil Classification System and the system used by the American Association of State Highway Officials (AASHO). The Unified Soil Classification System is used in military and civil construction - the AASHO System is based on field performance of highways and is used widely in highway construction. Engineering classification listed in the table may exclude the upper six to ten inches of soil (topsoil) because it generally contains too much organic matter for engineering use.

U. S. D. A. Texture

This column shows the dominant texture of each soil layer for which all the other estimates are made.

Range in Permeability

This column indicates the rate of water movement through a saturated soil in inches per hour.

Range in Available Moisture

This column indicates the amount of water in the soil which can be extracted and used by plants. Fragipan horizons, within the soil layers, will reduce available moisture by one half.

Reaction

Reaction, expressed in pH, shows the range in reaction (relative acidity) for each layer.

Optimum Moisture

Optimum moisture for compaction indicates the soil moisture content at which the greatest compaction can be obtained with a particular compaction effort.

Maximum Dry Density

This column indicates the weight of dry soil material in one cubic foot when compacted at the optimum moisture content.

Shrink-Swell Potential

The shrink-swell potential is an estimate of the soil's tendency to swell when wet and then shrink when drying. In general, soils classified as CH or A-7 have a high shrink-swell potential, while clean sand, gravel and other soils containing small amounts of non-plastic to slightly plastic materials have a low potential.

Corrosion Potential

This column indicates the tendency of a soil to corrode untreated steel and concrete pipes, culverts, tanks, etc., placed in the soil.

ESTIMATED SOIL PROPERTIES SIGNIFICANT TO ENGINEERING

TABLE 2

LACKAWANNA

PENNSYLVANIA

PAGE 1 OF 4

Soil Series and Map Symbol	Depth to ---		Coarse fraction greater than 3 inches (percent)	Percentage passing sieve ---				Engineering classification		USDA Texture (typical profile)	Range in permeability (inches per hour)	Range in available moisture capacity (inches per in. of depth)	Reaction Range in pH	Optimum moisture for compaction (percent)	Maximum dry density (pounds per cubic foot)	Shrink-swell potential	Corrosion Potential steel/concrete
	Seasonal high water table (feet)	Bedrock (feet)		No. 4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.075 mm)	Unified	AASHO								
Alton	3+	6+	0-28	55-90	40-70	25-60	15-45	SM, GM	A-2, A-4	gravelly sandy loam, very gravelly sandy loam	2.0-6.3	.06-.10	5.1-6.0	10-14	118-130	low	low/moderate
			28-60	40-55	30-55	10-40	1-12	GM, GP, GP-GM, SP	A-1, A-2	stratified sand and gravel	> 6.3	.04-.06	5.1-6.0	8-12	118-130	low	low/moderate
Arnot	3+	1-1 1/2 sand-stone	0-30	45-70	40-60	35-55	25-45	GM	A-2, A-4	channery silt loam	0.63-2.0	.10-.14	4.5-5.5	11-14	116-124	low	low/high
			5-30	40-65	35-55	30-50	20-40	GM	A-1, A-2	channery silt loam	0.63-2.0	.08-.12	4.5-5.5	9-13	120-130	low	low/high
			17+					SANDSTONE BEDROCK									
Atherton	0-1/2	6+	0-22	100	90-100	85-95	65-90	ML	A-4	silt loam	0.2-2.0	.16-.20	5.1-6.0	12-15	112-118	low	high/high
			22-40	75-100	55-70	50-60	40-60	SM, ML	A-4	gravelly silt loam	< 0.2	.10-.14	4.5-5.5	12-15	112-118	low	high/high
			40-60	35-60	25-50	25-45	20-30	GM	A-1, A-2	stratified sand and gravel	2.0-6.3	.02-.06	4.5-6.5	6-12	115-120	low	high/moderate
Bath	3+	4+	0-29	60-80	55-70	50-60	35-45	GM, GC, SM	A-2, A-4	channery silt loam, flaggy	0.63-2.0	.08-.12	4.5-6.0	11-20	102-128	low	low/high
			29-60	60-80	55-70	50-60	15-40	GM or GC	A-2, A-4	silt loam channery silt loam, flaggy	< 0.2	.06-.10	4.5-5.5	8-14	118-129	low	low/high
Birdsall	0-1/2	6+	0-10	90-100	90-100	85-100	80-95	ML, CL	A-4, A-6	silt loam	0.63-2.0	.16-.20	5.1-6.5	10-18	90-100	moderate	high/moderate
			10-60	95-100	90-100	85-100	65-90	ML, CL	A-4, A-6	silt loam, very fine sandy loam	< 0.2	.10-.14	5.1-6.5	10-18	90-100	moderate	high/moderate
Braceville	1 1/2-3	6+	0-19	65-90	50-70	40-60	25-55	ML, CL, GM, SM	A-2, A-4	gravelly loam	0.63-2.0	.08-.12	5.1-6.5	12-18	115-120	low	moderate/moderate
			19-38	65-90	50-70	40-60	25-55	ML, CL, GM, GC, SM	A-2, A-4	gravelly sandy loam	0.2-0.63	.06-.10	5.1-5.5	12-18	115-120	low	moderate/moderate
			38-60	40-70	35-55	25-45	15-35	GM, GC, SM or SC	A-1, A-2	very gravelly loam	2.0-6.3+	.03-.06	4.5-6.0	6-11	124-130	low	moderate/moderate

ESTIMATED SOIL PROPERTIES SIGNIFICANT TO ENGINEERING

TABLE 2

Soil Series and Map Symbol	Depth to ---		Coarse fraction greater than 3 inches (percent)	Percentage passing sieve ---				Engineering classification		USDA Texture (typical profile)	Range in permeability (inches per hour)	Range in available moisture capacity (inches per in. of depth)	Reaction Range in pH	Optimum moisture for compaction (percent)	Maximum dry density (pounds per cubic foot)	Shrink-swell potential	Corrosion Potential steel/concrete
	Seasonal high water table (feet)	Bedrock (feet)		No. 4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.075 mm)	Unified	AASHTO								
Chippewa	0-½	4+	0-5	70-100	65-90	65-85	60-80	ML, CL GM, GC, ML, CL	A-4 A-4, A-6	channery silt loam channery silt loam	0.2-2.0 < 0.2	.12-.16 .08-.12	5.1-6.0 5.1-6.5	- 12-18	- 105-120	moderate moderate	high/moderate high/moderate
Holly	0-½	6+	- 0-10	95-100 50-85	95-100 45-80	85-100 45-80	75-100 15-65	ML, CL SM, GM, ML	A-4, A-6 A-1, A-2, A-4	silt loam stratified sand and gravel	0.2-2.0 0.63-6.3	.16-.20 .06-.10	5.1-6.0 6.1-7.3	12-18 8-12	105-110 115-125	moderate low	high/moderate high/low
Lackawanna	3+	5+	0-20 0-20	40-80 50-75	40-75 40-65	35-70 35-55	20-60 20-40	GM, GC, ML GM, GC	A-2, A-4 A-2, A-4	channery loam, flaggy loam channery loam	0.63-2.0 < 0.20	.10-.14 .06-.10	4.5-6.0 4.5-5.5	11-16 10-14	115-122 120-128	low low	low/high low/high
Lordstown	3+	1½-3½	0-30 10-40 30+	45-70 35-65	40-60 30-55	30-55 20-50	25-45 15-30	GM GM	A-2, A-4 A-1, A-2	channery silt loam, flaggy silt loam very channery loam	0.63-2.0 0.63-2.0	.06-.10 .03-.08	4.5-5.0 4.5-5.0	11-14 9-13	116-124 120-130	low low	low/high low/high
Mardin	1½-3	5+	0-15 0-15	60-80 55-90	50-75 45-80	45-70 40-75	30-55 25-55	ML, CL, GM, GC ML, CL, GM, GC, SM	A-2, A-4 A-2, A-4, A-6	channery silt loam, flaggy silt loam channery loam, flaggy loam	0.63-2.0 < 0.20	.10-.14 .06-.10	5.1-6.0 5.1-6.5	10-15 10-12	110-125 123-128	low low	moderate/moderate moderate/moderate
Middlebury	1-3 flood- ing	6+	- 0-10	65-90 55-80	65-85 50-70	60-80 50-70	55-70 35-55	ML ML, SM, GM A-4	A-4 A-4	silt loam stratified sand and gravel	0.63-2.0 0.63-6.3	.12-.16 .05-.08	5.1-6.0 5.1-6.0	10-14 8-12	110-120 115-120	moderate low	moderate/moderate moderate/moderate
Mine dump											REQUIRES ON-SITE INVESTIGATION						
Mixed alluvial land											REQUIRES ON-SITE INVESTIGATION						

ESTIMATED SOIL PROPERTIES SIGNIFICANT TO ENGINEERING

TABLE 2

Soil Series and Map Symbol	Depth to ---		Coarse fraction greater than 3 inches (percent)	Percentage passing sieve ---				Engineering classification		USDA Texture (typical profile)	Range in permeability (inches per hour)	Range in available moisture capacity (inches per in. of depth)	Reaction Range in pH	Optimum moisture for compaction (percent)	Maximum dry density (pounds per cubic foot)	Shrink-swell potential	Corrosion Potential steel/concrete
	Seasonal high water table (feet)	Bedrock (feet)		No. 4 (4.75 mm)	No. 10 (2.0 mm)	No. 40 (0.425 mm)	No. 200 (0.075 mm)	Unified	AASHTO								
Morris	1-1 1/2	5+	0-20	60-95	55-90	40-85	35-60	GM, ML, CL	A-4	channery loam, flaggy loam	0.63-2.0	.12-.16	5.1-6.0	10-14	118-127	low	high/moderate
			0-20	60-95	55-80	40-75	25-55	GM, SM, ML, CL	A-2, A-4, A-6	channery loam	< 0.20	.06-.08	5.1-6.5	10-13	122-128	low	high/moderate
Mucky peat	0	5+	-	---	---	VARIABLE	---	Pt	---	muck, peat	---	---	4.5-6.0	NOT APPLICABLE	---	variable	high/high
Norwich	0	5+	0-10	85-100	80-95	70-90	45-70	ML, CL, SM, SC	A-4, A-6	channery silt loam	0.63-2.0	.14-.18	5.1-6.5	-	-	low	high/moderate
			0-20	75-85	60-80	55-75	30-65	ML, CL, SM, SC	A-2, A-4, A-6	channery silt loam	< 0.20	.08-.12	5.1-6.5	10-16	116-125	low	high/moderate
Oquaga	3+	1 1/2-3 1/2	0-15	40-75	35-65	30-55	25-45	SM, GM	A-2, A-4	channery loam, flaggy loam	2.0-6.3	.06-.10	4.5-5.5	-	-	low	moderate/high
			20-50	35-70	30-65	20-60	15-55	SM, GM, ML	A-1, A-2, A-4	very channery loam, flaggy loam	0.63-2.0	.03-.08	4.5-5.5	10-16	114-125	low	low/high
			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
			---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Red Hook	1-2 1/2	4+	-	70-95	65-80	60-85	55-75	ML	A-4	loam, gravelly loam	< 0.2	.08-.12	4.5-5.5	10-15	110-120	low	high/high
			-	60-90	50-75	40-65	25-55	GM, SM, ML	A-2, A-4	loam stratified sand and gravel	0.20-6.3	.04-.08	4.5-5.5	10-15	115-125	low	high/high
Riverwash	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Strip mine spoil	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Swartswood	3+	5+	0-15	65-85	60-80	45-70	25-45	SM	A-2, A-4	channery loam, gravelly sandy loam	0.63-6.3	.08-.12	4.0-5.0	10-14	118-126	low	low/high
			5-25	55-80	45-75	35-65	15-40	SM, GM	A-1, A-2, A-4	gravelly sandy loam	0.63-6.3	.06-.10	4.5-5.5	9-12	122-130	low	low/high

ESTIMATED SOIL PROPERTIES SIGNIFICANT TO ENGINEERING

TABLE 2

Soil Series and Map Symbol	Depth to ---		Coarse fraction greater than 3 inches (percent)	Percentage passing sieve ---				Engineering classification	USDA Texture (typical profile)	Range in permeability (inches per hour)	Range in available moisture capacity (inches per in. of depth)	Reaction Range in pH	Optimum moisture for compaction (percent)	Maximum dry density (pounds per cubic foot)	Shrink - swell potential	Corrosion Potential steel/concrete
	Seasonal high water table (feet)	Bedrock (feet)		No. 4 (4.7 mm)	No. 10 (2.0 mm)	No. 40 (0.42 mm)	No. 200 (0.075 mm)									
Tioga	3+	6+	-	65-90	60-80	55-75	40-65	ML, SM, SC	silt loam, fine sandy loam	0.63-2.0	.12-.16	5.1-6.0	10-14	110-120	Low	moderate/moderate
	flood- ing		0-5	50-75	45-60	40-50	20-45	GM, SM	stratified sand and gravel	0.63-6.3	.06-.10	5.1-6.0	8-12	115-120	Low	Low/moderate
Unadilla	4+	6+	-	80-100	75-100	70-100	55-95	ML	silt loam, very fine sandy loam	0.63-2.0	.14-.18	5.1-6.0	12-15	110-120	Low	Low/moderate
			0-10	35-80	25-65	10-45	2-30	SP, SW, SM, GP, GW, GM	gravelly loam to stratified sand and gravel	0.63-6.3	.03-.08	5.1-6.0	8-12	115-130	Low	Low/moderate
Urban land	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Very Stony land and Rock land	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Volusia	1 1/2-1 1/2	6+	0-20	70-95	65-90	60-85	45-70	ML, GM	channery silt loam, flaggy silt loam	0.63-2.0	.14-.18	5.1-6.0	-	-	Low	high/moderate
			0-20	65-90	55-80	50-75	40-65	GM, GC, ML, CL	channery loam	< 0.2	.08-.12	5.1-6.5	12-16	116-124	Low	high/moderate
Wellsboro	1 1/2-3	5+	15-30	70-90	65-85	60-85	30-60	ML, CL, SC, SM	channery loam, flaggy loam	0.63-2.0	.10-.14	4.5-5.5	10-15	115-125	Low	moderate/high
			30-60	65-90	55-85	50-75	30-60	GM, SM, ML, CL	channery loam	< 0.20	.06-.10	4.5-5.5	10-13	122-130	Low	moderate/high
Williamson	1 1/2-3	5+	-	95-100	95-100	90-100	85-95	ML	silt loam	0.63-2.0	.16-.20	4.5-6.0	-	-	Low	moderate/high
			-	95-100	95-100	85-100	80-95	ML, CL	silt loam	< 0.2	.10-.14	5.1-6.0	14-20	105-115	Low	moderate/high
			-	95-100	95-100	75-100	70-95	ML	layers of silt and very fine sand	0.20-0.63	.12-.16	5.6-6.5	14-20	105-115	Low	moderate/high
Wurtsboro	1 1/2-3	5+	0-10	70-95	65-90	55-85	30-50	SM	channery loam, flaggy loam	0.63-2.0	.10-.14	4.5-5.5	10-16	110-120	Low	moderate/high
			5-15	65-90	60-85	55-80	25-50	SM	gravelly fine sandy loam	0.20-0.63	.08-.12	4.5-5.5	9-15	115-130	Low	moderate/high

Rev. July 1967

USDA-SCS-NATURAL RES. 1978

SOIL INTERPRETATIONS FOR ENGINEERING

Soil Interpretations for Selected Engineering Uses, (Table 3), gives estimates of the suitability of the soils for specified engineering uses and lists the soil properties that present hazards or difficulties for specific engineering uses. In some cases where the soils have a few undesirable features, some important desirable features are listed. The statements in this table are based on the known or estimated physical properties of the soils and represent the judgment and opinion of engineers and soil scientists who have worked with these and similar soils.

Interpretations are given for the following engineering uses:

Suitability as source of.....

The suitability of a soil for topsoil, sand and gravel and road fill is rated as good, fair, poor, or unsuitable in these columns. In estimating the ratings of the soils as sources of topsoil, the uppermost 8 to 12 inches was generally considered; while in estimating ratings of the soils as sources of sand and gravel, the soil profile below the topsoil layer was considered.

The suitability of the soil as a source of road fill material depends largely on the texture of the soil and its bearing capacity. Plastic soils (those rated as A-5, A-6, or A-7 - see Table 2 preceding) that have a high natural content of water are difficult to handle, slow to dry, and hard to compact. Such soils are rated as poor. Soils rated as A-3 and A-4 are rated as fair for road fill; while soils rated as A-1 and A-2 are rated as good. Fine sand and silt, and other highly erodible soils, require flat slopes, close control of moisture while compacting, and rapid vegetation of side slopes to prevent erosion. These soils are rated poor to fair.

Soil features affecting engineering use for.....

The remaining columns in the table list briefly the major limiting soil factors affecting highway and road location, pond construction, drainage, sprinkler irrigation, terraces or diversions, grassed waterways, winter grading and pipeline construction and maintenance. The factor or factors listed under each column are the ones that present the greatest problems in the proper installation and operation of the specific item, or will favorable influence such installation operation.

This information will serve as a guide for determining the type and amount of detailed on-site investigations that will be needed. Where expensive, large, or heavy structures are planned, detailed investigations are necessary to determine in-place conditions of the soils at the site of the proposed structure.

SOIL INTERPRETATIONS FOR SELECTED ENGINEERING USES

TABLE 3
Rev. 8-69

SOILS AND MAPPING SYMBOLS		SUITABILITY AS SOURCE OF					SOIL FEATURES AFFECTING ENGINEERING USE FOR--				PIPELINE CONSTRUCTION AND MAINTENANCE			
		TOPSOIL	SAND AND GRAVEL	ROADFILL	HIGHWAY AND ROAD LOCATION	PONDS		DRAINAGE	SPRINKLER IRRIGATION	TERRACES OR DIVERSIONS	GRASSED WATERWAYS	WINTER GRADING		
						RESERVOIR AREA	EMBANKMENT							
Alton		Poor, gravelly	Good	Good	Cut slopes are droughty	Rapid permeability in sub-stratum	Good stability, permeable when compacted	Well drained	Low available moisture capacity	Irregular topography	Irregular topography	Features generally favorable	Subject to caving	
Arnot		Poor, channery, limited quantity	Unsuitable, too many fines	Fair, limited quantities	1 to 1½ feet to bedrock	1 to 1½ feet to pervious bedrock	Fair to good stability, limited quantities	Well drained	Low available moisture capacity, bedrock at 1 to 1½ feet	1 to 1½ feet to bedrock, low available moisture capacity	1 to 1½ feet to bedrock, low available moisture capacity	1 to 1½ feet to bedrock	1 to 1½ feet to bedrock	
Atherton		Fair, high water table	Fair, high water table	Fair to 40 inches, A-4, good below 40 inches, A-1, A-2	High water table, high frost heave potential	Moderately rapid permeability in sub-stratum	Moderately permeable when compacted	High water table, limited outlets	High water table, slow permeability	High water table, limited outlets	High water table, limited outlets	High water table	High water table, subject to caving	
Bath		Poor, channery, stony or flaggy	Unsuitable, too many fines	Good, poor on stony phases	Seepage above fragipan, some areas stony	Many areas sloping to moderately steep	Some areas stony	Well drained	Moderate available moisture capacity	Features generally favorable	Features generally favorable	Features generally favorable	Some areas stony	
Birdsall		Fair, high water table	Unsuitable, too many fines	Poor, A-4, A-6, poorly graded	High water table, cut slopes unstable	Features generally favorable	Poor stability, erodible materials	High water table, slow permeability	High water table, slow permeability	High water table	High water table	High water table	High water table	
Braceville		Poor, gravelly	Fair, seasonal high water table, too many fines	Good	Seasonal high water table, moderate frost heave potential	Moderately rapid permeability in sub-stratum	Stable, moderately permeable when compacted	Moderately slow permeability, seasonal high water table	Seasonal high water table, moderately slowly permeable	Seasonal high water table	Seasonal high water table	Seasonal high water table	Seasonal high water table, subject to caving	
Chippewa		Poor, channery, stony, high water table	Unsuitable, too many fines	Fair, A-4, A-6, high water table	High water table, moderate frost heave potential	Features generally favorable	Channery, some areas stony	High water table, slow permeability	High water table, slow permeability	High water table	High water table	High water table	High water table, some areas stony	

TABLE 3
Rev. 8-69

SOIL INTERPRETATIONS FOR SELECTED ENGINEERING USES

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 2 OF 5

SOILS AND MAPPING SYMBOLS	SUITABILITY AS SOURCE OF				SOIL FEATURES AFFECTING ENGINEERING USE FOR--								
	TOPSOIL	SAND AND GRAVEL	ROADFILL	HIGHWAY AND ROAD LOCATION	PONDS		DRAINAGE	SPRINKLER IRRIGATION	TERRACES OR DIVERSIONS	GRASSED WATERWAYS	WINTER GRADING	PIPELINE CONSTRUCTION AND MAINTENANCE	
					RESERVOIR AREA	EMBANKMENT							
Holly	Fair, high water table	Unsuitable, locally fair, high water table	Fair to 34 inches, A-4, good below 34 inches, A-1, A-2, A-4	High water table, flooding, high frost heave potential	Flooding hazard, and, moderately rapid permeability in substratum	Fair stability, piping hazard	High water table, flooding, outlet problems	Flooding, well drained	High water table, flooding	High water table, flooding	High water table	High water table, flooding, subject to caving	
Lackawanna	Poor, channery, stony, flaggy	Unsuitable, too many fines	Good, A-2, A-4, poor on stony phases	Seepage above fragipan, some areas stony	Many areas sloping to steep	Some areas stony	Well drained	Moderate available moisture capacity	Features generally favorable	Features generally favorable	Features generally favorable	Some areas stony	
Lordstown	Poor, channery, flaggy, stony	Unsuitable, too many fines	Fair, A-4, limited quantities	Sandstone bedrock at 1½ to 3½ feet	Sandstone bedrock at 1½ to 3½ feet	Limited quantities, fair resistance to piping, some areas stony	Well drained	Low available moisture capacity, sandstone bedrock at 1½ to 3½ feet	Sandstone bedrock at 1½ to 3½ feet, low available moisture capacity	Sandstone bedrock at 1½ to 3½ feet	Sandstone bedrock at 1½ to 3½ feet	Sandstone bedrock at 1½ to 3½ feet, some areas stony	
Martin	Poor, channery, stony, flaggy	Unsuitable, too many fines	Fair to good, A-2, A-4, A-6, seasonal high water table	Seasonal high water table, seepage above fragipan, moderate frost heave potential	Many areas sloping to moderately steep	Some areas stony	Seasonal high water table, slow permeability	Seasonal high water table, slow permeability	Seasonal high water table, seepage above fragipan	Seasonal high water table	Seasonal high water table	Seasonal high water table, some areas stony	
Middlebury	Good	Fair, too many fines	Fair, A-4, seasonal high water table	Seasonal high water table, moderate frost heave potential	Flooding, moderately rapid permeability in substratum	Fair stability, piping hazard	Seasonal high water table, flooding, outlet problems	Seasonal high water table, flooding	Nearly level	Seasonal high water table, flooding	Seasonal high water table	Seasonal high water table, flooding, subject to caving	
Mine dump	-----	-----	-----	-----	VARIABLE-----	-----	-----REQUIRES ON-SITE INVESTIGATION-----	-----	-----	-----	-----	-----	
Mixed alluvial land	-----	-----	-----	-----	VARIABLE-----	-----	-----REQUIRES ON-SITE INVESTIGATION-----	-----	-----	-----	-----	-----	

SOIL INTERPRETATIONS FOR SELECTED ENGINEERING USES

TABLE 3
Rev. 8-69

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 3 OF 5

SOILS AND MAPPING SYMBOLS	SUITABILITY AS SOURCE OF			SOIL FEATURES AFFECTING ENGINEERING USE FOR--							PIPELINE CONSTRUCTION AND MAINTENANCE	
	TOPSOIL	SAND AND GRAVEL	ROADFILL	HIGHWAY AND ROAD LOCATION	PONDS		DRAINAGE	SPRINKLER IRRIGATION	TERRACES OR DIVERSIONS	GRASSED WATERWAYS		WINTER GRADING
					RESERVOIR AREA	EMBANKMENT						
Morris	Poor, channery, stony, flaggy	Unsuitable, too many fines	Fair to good, A-2, A-4, A-6, seasonal high water table	Seasonal high water table, seepage above fragipan, moderate frost heave potential	Many areas sloping to moderately steep	Some areas stony	Slow permeability, seasonal high water table	Slow permeability, seasonal high water table	Seasonal high water table, seepage above fragipan	Seasonal high water table	Seasonal high water table, some areas stony	
Mucky peat	Poor, high water table good for mulch or organic material	Unsuitable, high water table, too many fines	Poor, organic material	Organic material, poor stability, subsidence, high water table	Organic material, possible pollution problem	Organic material, poor compaction, subsidence	High water table, subsidence, outlet problem	High water table, water level control for subirrigation	Nearly level	Nearly level	High water table, organic material	
Norwich	Poor, channery, stony, high water table	Unsuitable, too many fines	Fair, A-4, A-6, high water table	High water table, seepage above fragipan, moderate frost heave potential	Features generally favorable	Channery, some areas stony	High water table, slow permeability	Slow permeability, high water table	High water table, seepage above fragipan	High water table	High water table, some areas stony	
Oquaga	Poor, channery, stony, flaggy	Unsuitable, too many fines	Fair, limited quantities	Sandstone bedrock at 1½ to 3½ feet	Sandstone bedrock at 1½ to 3½ feet	Limited quantities, fair resistance to piping, some areas stony	Well drained	Low available moisture capacity, sandstone bedrock at 1½ to 3½ feet	Sandstone bedrock at 1½ to 3½ feet, low available moisture capacity	Sandstone bedrock at 1½ to 3½ feet	Bedrock at 1½ to 3½ feet, some areas stony	
Papakating	Fair, high water table	Unsuitable, too many fines	Poor, A-4, A-6, A-7, high water table	High water table, flooding	Flooding, moderately rapid permeability in substratum	Fair to poor stability	High water table, flooding, outlets limited, slow permeability	Flooding, high water table	High water table, flooding	High water table, flooding	High water table, flooding, subject to caving	
Red Hook	Fair, seasonal high water table	Poor, too many fines, seasonal high water table	Good	Seasonal high water table	Moderately rapid permeability in substratum	Good stability, permeable when compacted	Seasonal high water table, slow permeability	Seasonal high water table, slow permeability	Seasonal high water table	Seasonal high water table	Seasonal high water table, subject to caving	

SOIL INTERPRETATIONS FOR SELECTED ENGINEERING USES

TABLE 3
Rev. 8-69

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 4 OF 5

SOILS AND MAPPING SYMBOLS	SUITABILITY AS SOURCE OF				SOIL FEATURES AFFECTING ENGINEERING USE FOR--							
	TOPSOIL	SAND AND GRAVEL	ROADFILL	HIGHWAY AND ROAD LOCATION	POND		DRAINAGE	SPRINKLER IRRIGATION	TERRACES OR DIVERSIONS	GRASSED WATERWAYS	WINTER GRADING	PIPELINE CONSTRUCTION AND MAINTENANCE
					RESERVOIR AREA	EMBANKMENT						
Riverwash					VARIABLE		REQUIRES ON-SITE INVESTIGATION					
Strip mine spoil					VARIABLE		REQUIRES ON-SITE INVESTIGATION					
Swartswood	Poor, stony, channery	Poor, too many fines	Good	Seepage above fragipan, some areas stony	Moderate to moderately rapid permeability	Piping hazard, some areas stony	Well drained	Moderate to low available moisture capacity	Some areas stony	Some areas stony	Some areas stony	Some areas stony
Tioga	Good	Fair, too many fines	Good to fair, A-2, A-4	Flooding	Moderate permeability	Good to fair stability, piping hazard with material below 4 feet	Well drained	Flooding	Nearly level	Flooding	Susceptible to formation of frozen clods	Flooding, subject to caving
Unadilla	Good	Fair to poor, too many fines	Good to fair, A-1, A-2, A-4, erodible	High frost heave potential, erodible materials	Moderately rapid permeability in sub-stratum	Fair to poor stability, erodible	Well drained	Features generally favorable	Erodible	Erodible	Susceptible to formation of frozen clods	Hazard of caving
Urban land					VARIABLE		REQUIRES ON-SITE INVESTIGATION					
Very Stony land and Rock land					VARIABLE		REQUIRES ON-SITE INVESTIGATION					
Volusia	Poor, channery, flaggy, stony	Unsuitable, too many fines	Fair to good, A-4, seasonal high water table	Seasonal high water table, moderate frost heave potential, seepage above fragipan	Features generally favorable	Some areas stony	Seasonal high water table, slow permeability	Seasonal high water table, slow permeability	Seasonal high water table, seepage above fragipan	Seasonal high water table, seepage above fragipan	Seasonal high water table	Seasonal high water table, seepage above fragipan, some areas stony
Wellsboro	Poor, channery, flaggy, stony	Unsuitable, too many fines	Good to fair, A-2, A-4, seasonal high water table	Seasonal high water table, moderate frost heave potential, seepage above fragipan	Features generally favorable	Some areas stony	Seasonal high water table, slow permeability	Seasonal high water table, slow permeability	Seasonal high water table, seepage above fragipan	Seasonal high water table, seepage above fragipan	Seasonal high water table	Seasonal high water table, seepage above fragipan, some areas stony

SOIL INTERPRETATIONS FOR SELECTED ENGINEERING USES

TABLE 3
Rev. 8-69

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 5 OF 5

SOILS AND MAPPING SYMBOLS		SUITABILITY AS SOURCE OF				SOIL FEATURES AFFECTING ENGINEERING USE FOR---							
		TOPSOIL	SAND AND GRAVEL	ROADFILL	HIGHWAY AND ROAD LOCATION	PONDS		DRAINAGE	SPRINKLER IRRIGATION	TERRACES OR DIVERSIONS	GRASSED WATERWAYS	WINTER GRADING	PIPELINE CONSTRUCTION AND MAINTENANCE
						RESERVOIR AREA	EMBANKMENT						
Williamson		Good	Unsuitable, too many fines	Fair, A-4, A-6, poorly graded	Seasonal high water table, high frost heave potential, erodible	Features generally favorable	Poor stability, low resistance to piping, erodible	Seasonal high water table, slow permeability	Seasonal high water table, slow permeability	Seasonal high water table, erodible, seepage above fragipan	Seasonal high water table	Seasonal high water table	Seasonal high water table, seepage above fragipan
Wurtsboro		Poor, stony, channery, flaggy	Poor, too many fines, seasonal high water table	Good	Seasonal high water table, seepage above fragipan	Features generally favorable	Some areas stony	Seasonal high water table, moderately slow permeability	Seasonal high water table, moderately slow permeability	Seasonal high water table	Seasonal high water table	Seasonal high water table	Seasonal high water table, some areas stony

SOIL LIMITATIONS FOR COMMUNITY DEVELOPMENT

Planning is vital to today's changing and expanding communities. An increasing population coupled with greater mobility, more leisure time, and a higher standard of living all point to the need for community planning. Soils information provides a basic tool for sound community planning.

Table 4, Soil Limitations for Components of Community Development, lists the soil limitations for major aspects of community development. For each use, the soils are rated in terms of the degree of limitation - slight, moderate or severe. The degree of limitation indicates the severity of problems expected to be encountered for the specified use. Major limiting factor(s) are also listed when the soil has a moderate or severe rating. The three degrees of limitation are defined as follows:

1. Slight - These soils have few known limitations for the use indicated.
2. Moderate - These soils have one or more properties that limit their use. Correcting these factors will increase the installation and maintenance costs.
3. Severe - These soils have one or more properties that seriously limit their use. Using soils with a severe limitation will increase the probability of failure and add to the cost of installation and maintenance.

The decision as to whether or not a soil will be used for a specific purpose, regardless of the limitation, is beyond the scope of this information. At a price, almost any limitation can be overcome. The information contained in this table will be valuable in planning more detailed field surveys to determine the in-place condition of the soil at the site.

The seven components of community development rated in the table are:

Sewage effluent disposal (on-site septic tank disposal fields)

Successful operation of a septic tank tile disposal field depends upon the soil's ability to absorb and filter the effluent that passes through the field. Soil properties considered in rating the soil for this use are depth to bedrock, depth to seasonal high water table, permeability, slope, stoniness or rockiness and frequency of flooding.

Sewage lagoons

A sewage lagoon is a shallow impoundment designed to hold sewage during the time required for bacterial decomposition of the solids. A suitable soil for a lagoon must be nearly level and relatively impermeable so that seepage from the lagoon will not contaminate water supplies. Soil properties considered in rating the soil for this use are depth to bedrock, depth to seasonal high water table, permeability, slope, stoniness, rockiness and frequency of flooding.

Homesite locations with basements

Soil properties affect the location, construction and maintenance of buildings. These ratings are for homesites or buildings of three stories or less, with basements averaging at least five feet below normal ground level. A high seasonal water table may cause water to accumulate in the excavation during construction. Drains and tiling of water away from the building may be necessary to prevent wet basements after construction. Steep slopes present some problems in construction and the presence of large boulders or hard bedrock can increase construction costs. Properties considered in rating soils for this use are depth to bedrock, seasonal high water table, slope and frequency of flooding.

Lawns and landscaping

The soils are rated for these uses assuming they will be used for turf, shrubs and/or trees without adding topsoil. Suitable soils are capable of supporting a turf that can withstand moderate traffic and control runoff without erosion. Soil properties considered in rating the soil for this use are surface texture, depth to bedrock, depth to seasonal high water table, stoniness or rockiness, slope and frequency of flooding.

Streets and parking lots

The soils are rated for use of locating streets and parking lots in subdivisions rather than for major highways. It is assumed that the roads would be of a hard surface type. Slopes generally are more critical for streets in subdivisions than for highways. Steep slopes increase cut and fill requirements. A seasonal high water table can delay construction and require drainage plus expensive fill. Streets located on soils subject to flooding will have their use restricted during floods and are subject to damage. Soil properties considered in rating the soils for this use are depth to bedrock, depth to seasonal high water table, rockiness, slope and frequency of flooding.

Sanitary land fills (trench method)

This rating is for sanitary land fills using the trench method of operation. A good sanitary land fill should operate without contaminating water supplies, reducing land values, or causing health hazards. In addition, it should be usable during all seasons of the year. Soil properties considered in rating soils for this use are depth to bedrock, depth to seasonal high water table, slope, permeability, stoniness, rockiness and flood hazard. No importation of fill or cover material is considered in this rating.

Cemeteries (community type)

Soil properties should allow for excavation of grave sites during any season of the year. Depth to bedrock, seasonal high water table, slope, stoniness, rockiness and flood hazard were considered in rating the soil for this use.

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 1 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Alton gravelly sandy loam 13A 13B 13C	SLIGHT 1/	SEVERE Moderately rapid permeability 1/	SLIGHT	MODERATE Sandy loam surface	SLIGHT	SEVERE Moderately rapid permeability 1/	MODERATE Gravelly sandy loam texture
	SLIGHT 1/	SEVERE Moderately rapid permeability 1/	SLIGHT	MODERATE Sandy loam surface	MODERATE Slope	SEVERE Moderately rapid permeability 1/	MODERATE Gravelly sandy loam texture
	MODERATE Slope 1/	SEVERE Slope, moderately rapid permeability 1/	MODERATE Slope	MODERATE Sandy loam surface, slope	SEVERE Slope	SEVERE Moderately rapid permeability 1/	MODERATE Slope, gravelly sandy loam texture
	SEVERE Slope 1/	SEVERE Slope, moderately rapid permeability 1/	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, moderately rapid permeability 1/	SEVERE Slope
13F	SEVERE Slope 1/	SEVERE Slope, moderately rapid permeability 1/	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, moderately rapid permeability 1/	SEVERE Slope
48B Arnot rocky silt loam	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock, moderate permeability	SEVERE 1 to 1½ feet to bedrock

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 2 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Arnot rocky silt loam	48C SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, moderate permeability	SEVERE 1 to 1½ feet to bedrock
	48D SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, moderate permeability	SEVERE 1 to 1½ feet to bedrock, slope
Arnot very rocky silt loam	50B SEVERE 1 to 1½ feet to bedrock, rocky	SEVERE 1 to 1½ feet to bedrock	SEVERE 1 to 1½ feet to bedrock, rocky	SEVERE 1 to 1½ feet to bedrock, rocky	SEVERE 1 to 1½ feet to bedrock, rocky	SEVERE 1 to 1½ feet to bedrock, rocky, moderate permeability	SEVERE 1 to 1½ feet to bedrock, rocky
	50D SEVERE 1 to 1½ feet to bedrock, rocky, slope	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, rocky, slope	SEVERE 1 to 1½ feet to bedrock, rocky, slope	SEVERE 1 to 1½ feet to bedrock, rocky, slope	SEVERE 1 to 1½ feet to bedrock, rocky, moderate permeability	SEVERE 1 to 1½ feet to bedrock, rocky, slope
50F	SEVERE 1 to 1½ feet to bedrock, slope, rocky	SEVERE 1 to 1½ feet to bedrock, slope	SEVERE 1 to 1½ feet to bedrock, rocky, slope	SEVERE Slope, rocky	SEVERE Slope, 1 to 1½ feet to bedrock, rocky	SEVERE 1 to 1½ feet to bedrock, rocky, moderate permeability	SEVERE Slope, 1 to 1½ feet to bedrock, rocky

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 3 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Atherton loam 18A	SEVERE High water table, slow permeability	SEVERE Moderately rapid permea- bility in sub- stratum	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table
Bath channery silt loam 51B	SEVERE Slow permea- bility	MODERATE Slope, channery	SLIGHT	SLIGHT	MODERATE Slope	SLIGHT	SLIGHT
51C	SEVERE Slow permea- bility	SEVERE Slope	MODERATE Slope	MODERATE Slope	SEVERE Slope	MODERATE Slope	MODERATE Slope
51D	SEVERE Slope, slow permeability	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope
Bath extremely stony silt loam 153B	SEVERE Slow permea- bility, stony	MODERATE Slope, stony	SEVERE Stony	SEVERE Stony	MODERATE Stony, slope	SEVERE Stony	SEVERE Stony
153D	SEVERE Slope, stony, slow permea- bility	SEVERE Slope	SEVERE Slope, stony	SEVERE Slope, stony	SEVERE Slope	SEVERE Slope, stony	SEVERE Slope, stony
Bath flaggy silt loam 52B	SEVERE Slow permea- bility	MODERATE Slope, flaggy	SLIGHT	SEVERE Flaggy	MODERATE Slope	SLIGHT	SEVERE Flaggy

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 4 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Bath flaggy silt loam 52C	SEVERE Slow permeability	SEVERE Slope	MODERATE Slope	SEVERE Flaggy	SEVERE Slope	MODERATE Slope	SEVERE Flaggy
Bath very stony silt loam 53B	SEVERE Slow permeability	MODERATE Slope, channery	MODERATE Stony	MODERATE Stony	MODERATE Slope	MODERATE Stony	SEVERE Channery, stony
53D	SEVERE Slow permeability, slope	SEVERE Slope, channery	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, channery, stony
Birdsall silt loam 348A	SEVERE High water table, slow permeability	SLIGHT (Inflow hazard)	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table
Braceville gravelly loam 16A	SEVERE Moderately slow permeability	SEVERE Rapid permeability in sub-stratum	MODERATE Seasonal high water table	SLIGHT	MODERATE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table
16B	SEVERE Moderately slow permeability	SEVERE Rapid permeability in sub-stratum	MODERATE Seasonal high water table	SLIGHT	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table	MODERATE Seasonal high water table
Holly silt loam 6	SEVERE Flooding, high water table	SEVERE Flooding	SEVERE Flooding, high water table	SEVERE Flooding, high water table	SEVERE Flooding, high water table	SEVERE Flooding, high water table	SEVERE Flooding, high water table

Rev. 11-66

0184-SC-HATTSVILLE, MD. 1970

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 5 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Lackawanna channery loam 71B 71C 71D	SEVERE Slope, slow permeability	MODERATE Slope, channery	SLIGHT	SLIGHT	MODERATE Slope	SLIGHT	SLIGHT
	SEVERE Slope, slow permeability	SEVERE Slope	MODERATE Slope	MODERATE Slope	SEVERE Slope	MODERATE Slope	MODERATE Slope
	SEVERE Slope, slow permeability	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope
	SEVERE Slope, slow permeability	MODERATE Slope, flaggy	SLIGHT	SEVERE Flaggy	MODERATE Slope	SLIGHT	SEVERE Flaggy
Lackawanna flaggy loam 72B 72C	SEVERE Slope, slow permeability	SEVERE Slope	MODERATE Slope	SEVERE Flaggy	SEVERE Slope	MODERATE Slope	SEVERE Flaggy
Lackawanna very stony loam 73B 73D	SEVERE Slope, slow permeability	MODERATE Slope, channery	MODERATE Stony	MODERATE Stony	MODERATE Slope	MODERATE Stony	SEVERE Stony
	SEVERE Slope, slow permeability	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, stony
Lackawanna and Bath very stony loams 73F	SEVERE Slope, slow permeability	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, stony

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 6 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Lordstown channery silt loam	45B SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	MODERATE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock
	45C SEVERE 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	MODERATE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock
	45D SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, moderate permeability	SEVERE Slope, 1½ to 3½ feet to bedrock
Lordstown extremely stony silt loam	147B SEVERE 1½ to 3½ feet to bedrock, stony	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, stony	SEVERE Stony	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, stony, moderate permeability	SEVERE 1½ to 3½ feet to bedrock, stony
	147D SEVERE 1½ to 3½ feet to bedrock, slope, stony	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, stony	SEVERE Slope, stony	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, stony, moderate permeability	SEVERE Slope, 1½ to 3½ feet to bedrock, stony

Rev. 11-66

USDA-SCS-HATTSVILLE, MD. 1970

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 7 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Lordstown flaggy silt loam 46B	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE Flaggy	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock, flaggy
	SEVERE 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE Flaggy	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock, flaggy
	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	MODERATE Stony	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock, stony
Lordstown very stony silt loam 47B	SEVERE 1½ to 3½ feet to bedrock, slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, moderate permeability	SEVERE Slope, 1½ to 3½ feet to bedrock
	SEVERE Slow permeability	MODERATE Slope, channery	MODERATE Seasonal high water table	SLIGHT	MODERATE Slope, seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table
Mardin channery silt loam 55B	SEVERE Slow permeability	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Slope	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, slope

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 8 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Mardin channery silt loam 55D	SEVERE Slow permeability, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope
Mardin extremely stony silt loam 157B	SEVERE Slow permeability, stony	MODERATE Slope, stony	SEVERE Stony	SEVERE Stony	MODERATE Seasonal high water table, slope, stony	SEVERE Stony	SEVERE Stony
157D	SEVERE Slow permeability, slope, stony	SEVERE Slope	SEVERE Slope, stony	SEVERE Slope, stony	SEVERE Slope	SEVERE Slope, stony	SEVERE Slope, stony
Mardin flaggy silt loam 56B	SEVERE Slow permeability	MODERATE Slope, flaggy	MODERATE Seasonal high water table	SEVERE Flaggy	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table	SEVERE Flaggy
56C	SEVERE Slow permeability	SEVERE Slope	MODERATE Seasonal high water table, slope	SEVERE Flaggy	SEVERE Slope	MODERATE Seasonal high water table, slope	SEVERE Flaggy
Mardin very stony silt loam 57B	SEVERE Slow permeability	MODERATE Slope, channery	MODERATE Seasonal high water table, stony	MODERATE Stony	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, stony	SEVERE Stony
57D	SEVERE Slow permeability, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, stony

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 9 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Middlebury silt loam 5	SEVERE Flooding, seasonal high water table	SEVERE Flooding	SEVERE Flooding, seasonal high water table	MODERATE Flooding, seasonal high water table	SEVERE Flooding	SEVERE Flooding, moderate permeability	SEVERE Flooding
Mine dump MD	VARIABLE Slope	SEVERE Rapid permeability, slope	SEVERE Slope, stony	SEVERE Slope, channery, acid material	VARIABLE Slope, stony	VARIABLE Slope, rapid permeability	VARIABLE Slope, stony
Mine dump, burning or burned MB	VARIABLE Slope	SEVERE Rapid permeability, acid material	SEVERE Slope, burning, acid material	SEVERE Burning, acid material	VARIABLE Slope, stony	VARIABLE Slope, rapid permeability	VARIABLE Slope, stony
Mixed alluvial land 8	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding
Morris channery loam 31A	SEVERE Slow permeability, seasonal high water table	MODERATE Channery	SEVERE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table	SEVERE Seasonal high water table	SEVERE Seasonal high water table
31B	SEVERE Slow permeability, seasonal high water table	MODERATE Slope, channery	SEVERE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table, slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 10 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Morris channery loam 31C	SEVERE Slow permeability, seasonal high water table	SEVERE Slope	SEVERE Seasonal high water table	MODERATE Slope, seasonal high water table	SEVERE Slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table
	31D SEVERE Slow permeability, seasonal high water table, slope	SEVERE Slope	SEVERE Seasonal high water table, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, seasonal high water table	SEVERE Seasonal high water table, slope
Morris extremely stony loam 133B	SEVERE Slow permeability, seasonal high water table, stony	MODERATE Slope, stony	SEVERE Seasonal high water table, stony	SEVERE Stony	MODERATE Seasonal high water table, slope, stony	SEVERE Seasonal high water table, stony	SEVERE Seasonal high water table, stony
Morris flaggy loam 32B	SEVERE Slow permeability, seasonal high water table	MODERATE Slope, flaggy	SEVERE Seasonal high water table	SEVERE Flaggy	MODERATE Seasonal high water table, slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table, flaggy
	32C SEVERE Slow permeability, seasonal high water table	SEVERE Slope	SEVERE Seasonal high water table	SEVERE Flaggy	SEVERE Slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table, flaggy

Rev. 11-66

USDA-SC-HATTSVILLE, MD. 1970

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 11 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Morris very stony loam 33B	SEVERE Slow permeability, seasonal high water table	MODERATE Slope, channery	SEVERE Seasonal high water table	MODERATE Stony	MODERATE Seasonal high water table, slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table, stony
33D	SEVERE Slow permeability, seasonal high water table, slope	SEVERE Slope	SEVERE Seasonal high water table, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, seasonal high water table	SEVERE Seasonal high water table, slope, stony
Mucky peat 97	SEVERE High water table	SEVERE High organic matter content	SEVERE High water table, unstable	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table
Norwich and Chippewa channery silt loams 35A	SEVERE Slow permeability, high water table	SLIGHT (Inflow hazard)	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table
35B	SEVERE Slow permeability, high water table	MODERATE Slope	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table
Norwich and Chippewa very stony silt loams 37B	SEVERE Slow permeability, high water table	MODERATE Slope	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table, stony

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 12 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Oquaga channery loam 41B 41C 41D	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	MODERATE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock
	SEVERE 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	MODERATE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock
	SEVERE 1½ to 3½ feet to bedrock, slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, slope	SEVERE Slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, moderate permeability	SEVERE Slope, 1½ to 3½ feet to bedrock
Oquaga extremely stony loam 143D	SEVERE 1½ to 3½ feet to bedrock, slope, stony	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, slope, stony	SEVERE Slope, stony	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, stony, moderate permeability	SEVERE Slope, 1½ to 3½ feet to bedrock, stony
Oquaga flaggy loam 42B	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE Flaggy	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock, flaggy

Rev. 11-66

USDA-SCS-WATERVILLE, MD. 1979

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 13 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Oquaga flaggy loam 42C	SEVERE 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE Flaggy	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, flaggy
Oquaga very stony loam 43B	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock	MODERATE Stony	SEVERE 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, moderate permeability	SEVERE 1½ to 3½ feet to bedrock, stony
43D	SEVERE 1½ to 3½ feet to bedrock, slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE 1½ to 3½ feet to bedrock, slope	SEVERE Slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, moderate permeability	SEVERE Slope, 1½ to 3½ feet to bedrock, stony
Oquaga and Lordstown very stony loams 43F	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope	SEVERE Slope, 1½ to 3½ feet to bedrock	SEVERE Slope, 1½ to 3½ feet to bedrock, moderate permeability	SEVERE Slope, stony, 1½ to 3½ feet to bedrock
Papakating silt loam 7	SEVERE Flooding, high water table	SEVERE Flooding	SEVERE Flooding, high water table	SEVERE Flooding, high water table	SEVERE Flooding, high water table	SEVERE Flooding, high water table	SEVERE Flooding, high water table
Red Hook loam 17A	SEVERE Seasonal high water table, slow permeability	SEVERE Rapid permeability in sub-stratum	SEVERE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table	SEVERE Seasonal high water table	SEVERE Seasonal high water table

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 14 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Red Hook loam 17B	SEVERE Seasonal high water table, slow permeability	SEVERE Rapid permeability in sub-stratum	SEVERE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table, slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table
Riverwash 9	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding
Strip mine spoil MS	VARIABLE Slope	VARIABLE Slope, stony	VARIABLE Slope, stony	VARIABLE Slope, stony	VARIABLE Slope, stony	VARIABLE Slope, stony	VARIABLE Slope, stony
Swartswood channery loam 82B	SLIGHT $\frac{1}{2}$	MODERATE Moderate permeability	SLIGHT	SLIGHT	MODERATE Slope	SEVERE Moderate permeability	SLIGHT
82C	MODERATE Slope $\frac{1}{2}$	SEVERE Slope	MODERATE Slope	MODERATE Slope	SEVERE Slope	SEVERE Moderate permeability	MODERATE Slope
82D	SEVERE Slope $\frac{1}{2}$	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, moderate permeability	SEVERE Slope
Swartswood extremely stony loam 184B	SEVERE Stony $\frac{1}{2}$	MODERATE Stony, slope, channery	SEVERE Stony	SEVERE Stony	MODERATE Slope, stony	SEVERE Stony, moderate permeability	SEVERE Stony

Rev. 11-66

USDA-SCIENTISTSVILLE, MD. 1970

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 15 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Swartswood extremely stony loam 184D	SEVERE Slope, stoniness 1/	SEVERE Slope	SEVERE Slope, stony	SEVERE Slope, stony	SEVERE Slope	SEVERE Slope, stony, moderate permeability 1/	SEVERE Slope, stony
Swartswood very stony loam 84B	SLIGHT 1/	MODERATE Rapid permeability, slope	MODERATE Stony	MODERATE Stony	MODERATE Slope	SEVERE Moderate permeability 1/	SEVERE Stony
84D	SEVERE Slope 1/	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, moderate permeability 1/	SEVERE Slope, stony
Tioga soils 1	SEVERE Flooding 1/	SEVERE Flooding	SEVERE Flooding	MODERATE Flooding	SEVERE Flooding	SEVERE Flooding, moderate permeability 1/	SEVERE Flooding
Tioga soils, high bottom 3	SEVERE Flooding 1/	SEVERE Flooding	SEVERE Flooding	SLIGHT	MODERATE Flooding	SEVERE Moderate permeability 1/	MODERATE Flooding
Unadilla silt loam 14B	SLIGHT 1/	SEVERE Rapid permeability in substratum	SLIGHT	SLIGHT	MODERATE Slope	SEVERE Moderate permeability 1/	SLIGHT
14C	MODERATE Slope 1/	SEVERE Slope, rapid permeability in substratum	MODERATE Slope	MODERATE Slope	SEVERE Slope	SEVERE Moderate permeability 1/	MODERATE Slope

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 16 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Urban land	100B	VARIABLE		ON-SITE INVESTIGATION NEEDED			
	100D	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope
Urban land, alluvial materials	101A	VARIABLE		ON-SITE INVESTIGATION NEEDED			
Very Stony land and Rock land	99D	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky
	99F	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky	SEVERE Slope, stony, rocky
Volusia channery silt loam	61A	SEVERE Slow permeability, seasonal high water table	SEVERE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table	SEVERE Seasonal high water table	SEVERE Seasonal high water table
	61B	SEVERE Slow permeability, seasonal high water table	SEVERE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table, slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table
	61C	SEVERE Slow permeability, seasonal high water table	SEVERE Seasonal high water table	MODERATE Seasonal high water table, slope	SEVERE Slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table

Rev. 11-66

USDA-SCS-HYATTSVILLE, MD. 1970

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 17 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Volusia channery silt loam 61D	SEVERE Slow permeability, seasonal high water table, slope	SEVERE Slope	SEVERE Seasonal high water table, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, seasonal high water table	SEVERE Seasonal high water table, slope
Volusia extremely stony loam 163B	SEVERE Slow permeability, seasonal high water table, stony	MODERATE Slope, stony, channery	SEVERE Seasonal high water table, stony	SEVERE Stony	MODERATE Seasonal high water table, slope, stony	SEVERE Seasonal high water table, stony	SEVERE Seasonal high water table, stony
Volusia flaggy silt loam 62B	SEVERE Slow permeability, seasonal high water table	MODERATE Slope, flaggy	SEVERE Seasonal high water table	SEVERE Flaggy	MODERATE Seasonal high water table, slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table, flaggy
62C	SEVERE Slow permeability, seasonal high water table	SEVERE Slope	SEVERE Seasonal high water table	SEVERE Flaggy	SEVERE Slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table, flaggy
Volusia very stony silt loam 63B	SEVERE Slow permeability, seasonal high water table	MODERATE Slope, channery	SEVERE Seasonal high water table	MODERATE Stony	MODERATE Seasonal high water table, slope	SEVERE Seasonal high water table	SEVERE Seasonal high water table, stony

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

PAGE 18 OF 20

COUNTY, PENNSYLVANIA

LACKAWANNA

TABLE 4

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Volusia very stony silt loam 63D	SEVERE Slow permeability, seasonal high water table, slope	SEVERE Slope	SEVERE Seasonal high water table, slope	SEVERE Slope	SEVERE Slope	SEVERE Seasonal high water table, slope	SEVERE Seasonal high water table, slope, stony
Wellsboro channery loam 75B	SEVERE Slow permeability	MODERATE Slope, channery	MODERATE Seasonal high water table	SLIGHT	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table	MODERATE Seasonal high water table
75C	SEVERE Slow permeability	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Slope	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, slope
75D	SEVERE Slow permeability, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope
Wellsboro flaggy loam 76B	SEVERE Slow permeability	MODERATE Slope, flaggy	MODERATE Seasonal high water table	SEVERE Flaggy	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table	SEVERE Flaggy
76C	SEVERE Slow permeability	SEVERE Slope	MODERATE Seasonal high water table, slope	SEVERE Flaggy	SEVERE Slope	MODERATE Seasonal high water table, slope	SEVERE Flaggy

Rev. 11-66

USDA-SCS-WATTSVILLE, MD. 1970

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 19 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Wellsboro very stony loam 77B	SEVERE Slow permeability	MODERATE Slope, channery	MODERATE Seasonal high water table, stony	MODERATE Stony	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, stony	SEVERE Stony
77D	SEVERE Slow permeability, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, stony
Williamson silt loam 114B	SEVERE Slow permeability	MODERATE Slope	MODERATE Seasonal high water table	SLIGHT	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table	MODERATE Seasonal high water table
Wurtsboro channery loam 86B	SEVERE Moderately slow permeability	MODERATE Slope	MODERATE Seasonal high water table	SLIGHT	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table	MODERATE Seasonal high water table
86C	SEVERE Moderately slow permeability	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Slope	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, slope
Wurtsboro extremely stony loam 188B	SEVERE Moderately slow permeability, stony	MODERATE Slope, stony, channery	SEVERE Stony	SEVERE Stony	MODERATE Seasonal high water table, slope, stony	SEVERE Stony	SEVERE Stony
Wurtsboro flaggy loam 87B	SEVERE Moderately slow permeability	MODERATE Slope, flaggy	MODERATE Seasonal high water table	SEVERE Flaggy	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table	SEVERE Flaggy

SOIL LIMITATIONS FOR COMPONENTS OF COMMUNITY DEVELOPMENT

TABLE 4

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 20 OF 20

SOILS AND MAPPING SYMBOLS	SEWAGE EFFLUENT DISPOSAL (On site Septic Tank)	SEWAGE LAGOONS	HOMESITE LOCATION WITH BASEMENTS (3 stories or less)	LAWNS AND LANDSCAPING	STREETS PARKING LOTS (Sub-divisions)	SANITARY LAND FILLS (Trench Method)	CEMETERIES (Community)
Wurtsboro flaggy loam 87C	SEVERE Moderately slow permeability	SEVERE Slope	MODERATE Seasonal high water table, slope	SEVERE Flaggy	SEVERE Slope	MODERATE Seasonal high water table, slope	SEVERE Flaggy
Wurtsboro very stony loam 88B	SEVERE Moderately slow permeability	MODERATE Slope, channery	MODERATE Seasonal high water table, stony	MODERATE Stony	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, stony	SEVERE Stony
88D	SEVERE Moderately slow permeability, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, stony
1/ Hazard of ground water contamination							

Rev. 11-66

USDA-RCS-HVATVILLE, MD. 1179

SOIL LIMITATIONS FOR RECREATIONAL DEVELOPMENT

Today, outdoor recreation is an important and necessary part of our way of life. Undoubtedly, many new recreational developments will be located around our communities to serve this increasing demand. A knowledge of soils is essential in selecting sites for various outdoor recreational development.

Table 5, Soil Limitations for Recreational Development, lists the soil limitations for seven major components of recreational development. Each soil is rated for these uses in terms of the degree of limitation - slight, moderate or severe. This degree of limitation indicates the severity of problems expected to be encountered. Decisions as to whether or not a soil will be used for these specific purposes, regardless of its limitation, is beyond the scope of this report. Definitions of the three degrees of limitation can be found in the preceding narrative, Soil Limitations for Community Development.

Soil properties considered in rating soils for recreational development include depth to bedrock, depth to seasonal high water table, slope, surface texture, stoniness and frequency of flooding. Each property affects the way a soil will respond to a specific recreational use. Information presented in the table should be used for screening sites for more detailed on-site investigations. The seven components of recreational development rated in the table are discussed below:

Tent and Trailer Camp Sites

These soil ratings apply to areas suitable for tents with platforms and small trailer camp sites and the accompanying activities for outdoor living. These areas are used frequently during the camping season which normally extends from May 30 until Labor Day. The soils are rated assuming little site preparation other than shaping and leveling tent and parking areas. The site should be suitable for heavy foot traffic by humans, horses or vehicular traffic. Suitability of soil for supporting vegetation is a separate item to be considered in the final evaluation of selecting sites for these uses.

Buildings without Basements

These soil ratings classify a soil according to limitations for use as building sites for seasonal and year-round cottages, washrooms and bathhouses, picnic shelters and service buildings without basements. Soil limitations for buildings with basements are given in Table 4, Soil Limitations for Community Development.

Paths and Trails

This soil rating applies to areas that are to be used for trails, cross-country hiking, bridle paths and nonintensive uses which allow for random movement of people. It is assumed that these areas are to be used as they occur in nature with little soil moved (excavated) for planned recreational use. Areas such as swamps, marshes, peat bogs, sand dunes and the like, are considered as having very severe soil limitations.

Picnic and Play Areas

These soil ratings apply to areas to be developed for hiking, picnicking and casual play where only light foot traffic is expected. The ratings are based on soil features only and do not include other features such as the presence of trees or lakes, which may affect the desirability of a site. Suitability of soil for supporting vegetation is a separate item to be considered in the final evaluation of selecting sites for these uses.

Athletic Fields

These soils ratings apply to areas to be developed as playgrounds for organized games such as baseball, football, badminton, etc. Areas selected for this use are subject to intensive foot traffic; therefore, a nearly level surface, good drainage, and a soil texture and consistency which gives a firm surface are generally required. The most desirable soils are also free of rock outcrops and coarse fragments. It is assumed that good vegetative cover can be established and maintained on areas where needed.

Golf Fairways

The soils are rated for this use assuming they will be used for turf, shrubs and trees without adding topsoil. Traps, roughs and greens are specialized features not considered in ratings for golf fairways.

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 1 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In extensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Alton gravelly sandy loam	13A MODERATE Gravelly	MODERATE Gravelly	SLIGHT	MODERATE Gravelly	MODERATE Gravelly	SEVERE Gravelly	MODERATE Gravelly	
	13B MODERATE Gravelly	MODERATE Slope, gravelly	SLIGHT	MODERATE Gravelly	MODERATE Gravelly	SEVERE Gravelly	MODERATE Gravelly	
	13C MODERATE Slope, gravelly	SEVERE Slope	MODERATE Slope	MODERATE Gravelly	MODERATE Gravelly, slope	SEVERE Gravelly, slope	MODERATE Gravelly, slope	
	13D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Gravelly, slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	
Arnot rocky silt loam	13F SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	
	48B MODERATE Rocky, channery	MODERATE Rocky, channery, slope	MODERATE Depth to bed- rock	MODERATE Channery	MODERATE Channery	SEVERE Depth to bed- rock, channery	SEVERE Depth to bed- rock	
	48C MODERATE Slope, rocky, channery	SEVERE Slope	MODERATE Depth to bed- rock, slope	MODERATE Channery	MODERATE Channery, slope	SEVERE Depth to bed- rock, chan- nery, slope	SEVERE Depth to bed- rock	
	48D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, slope	SEVERE Slope	SEVERE Depth to bed- rock, chan- nery, slope	SEVERE Depth to bed- rock, slope	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 2 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Arnot very rocky silt loam	50B MODERATE Rocky, chan- nery	MODERATE Rocky, chan- nery, slope	MODERATE Depth to bed- rock, rocky	MODERATE Rocky, chan- nery	MODERATE Rocky, channery	SEVERE Depth to bed- rock, rocky, channery	SEVERE Depth to bed- rock, rocky	
	50D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Rocky, chan- nery, slope	SEVERE Slope	SEVERE Depth to bed- rock, rocky, channery	SEVERE Depth to bed- rock, rocky, slope	
	50F SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Depth to bed- rock, rocky, channery	SEVERE Depth to bed- rock, rocky, slope	
Atherton loam	18A SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	
	Bath channery silt loam 51B MODERATE Slow permea- bility, chan- nery	MODERATE Slow permea- bility, chan- nery, slope	SLIGHT	MODERATE Channery	MODERATE Channery	SEVERE Channery	MODERATE Channery	
51C MODERATE Slow permea- bility, chan- nery, slope	51C MODERATE Slow permea- bility, chan- nery, slope	SEVERE Slope	MODERATE Slope	MODERATE Channery	MODERATE Channery, slope	SEVERE Channery, slope	MODERATE Channery, slope	
	51D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, slope	SEVERE Slope	SEVERE Channery, slope	SEVERE Slope	

Rev. 11-66

USDA-SCENARIOSVILLE, MD. 1971

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 3 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Bath extremely stony silt loam	153B SEVERE Stony	SEVERE Stony	MODERATE Stony	SEVERE Stony	MODERATE Stony, chan- nery	SEVERE Stony, chan- nery	SEVERE Stony	
	153D SEVERE Stony, slope	SEVERE Stony, slope	SEVERE Slope	SEVERE Stony	SEVERE Slope	SEVERE Slope, stony, channery	SEVERE Stony, slope	
Bath flaggy silt loam	52B MODERATE Flaggy, slow permeability	MODERATE Flaggy, slow permeability, slope	SLIGHT	MODERATE Flaggy	MODERATE Flaggy	SEVERE Flaggy	SEVERE Flaggy	
	52C MODERATE Flaggy, slow permeability, slope	SEVERE Slope	MODERATE Slope	MODERATE Flaggy	MODERATE Flaggy, slope	SEVERE Flaggy, slope	SEVERE Flaggy	
Bath very stony silt loam	53B MODERATE Stony, slow permeability, channery	MODERATE Stony, slow permeability, slope, chan- nery	SLIGHT	MODERATE Stony, chan- nery	MODERATE Channery	SEVERE Channery	MODERATE Channery, stony	
	53D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Stony, chan- nery, slope	SEVERE Slope	SEVERE Slope, chan- nery	SEVERE Slope	
Birdsall silt loam 348A	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 4 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS IN (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Braceville gravelly loam 16A	MODERATE Moderately slow permea- bility, gravelly	MODERATE Moderately slow permea- bility, gravelly	SLIGHT	MODERATE Gravelly	MODERATE Gravelly	SEVERE Gravelly	MODERATE Gravelly	
	MODERATE Moderately slow permea- bility, gravelly	MODERATE Moderately slow permea- bility, gravelly, slope	SLIGHT	MODERATE Gravelly	MODERATE Gravelly	SEVERE Gravelly	MODERATE Gravelly	
Holly silt loam 6	SEVERE High water table	SEVERE High water table	SEVERE High water table, flooding	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	
Lackawanna channery loam 71B	MODERATE Slow permea- bility, chan- nery	MODERATE Slow permea- bility, chan- nery, slope	SLIGHT	MODERATE Channery	MODERATE Channery	SEVERE Channery	MODERATE Channery	
	MODERATE Slow permea- bility, chan- nery, slope	SEVERE Slope	MODERATE Slope	MODERATE Channery	MODERATE Channery, slope	SEVERE Channery, slope	MODERATE Channery, slope	
71D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, slope	SEVERE Slope	SEVERE Channery, slope	SEVERE Slope	

Rev. 11-66

USDA-SCHWARTZVILLE, MD. 1971

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 5 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In extensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Lackawanna flaggy loam	72B MODERATE Slow permea- bility, flaggy	MODERATE Slow permea- bility, flaggy, slope	SLIGHT	MODERATE Flaggy	MODERATE Flaggy	SEVERE Flaggy	SEVERE Flaggy	
	72C MODERATE Slow permea- bility, flaggy, slope	SEVERE Slope	MODERATE Slope	MODERATE Flaggy	MODERATE Flaggy, slope	SEVERE Flaggy, slope	SEVERE Flaggy	
Lackawanna very stony loam	73B MODERATE Slow permea- bility, stony, channery	MODERATE Slow permea- bility, stony, slope, chan- nery	SLIGHT	MODERATE Stony, channery	MODERATE Channery	SEVERE Channery	MODERATE Channery, stony	
	73D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Stony, chan- nery, slope	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
Lackawanna and Bath very stony loams	73F SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
	45B MODERATE Channery	MODERATE Channery, slope	SLIGHT	MODERATE Channery	MODERATE Channery	SEVERE Channery	MODERATE Channery, depth to bed- rock	
Lordstown channery silt loam	45C MODERATE Channery, slope	SEVERE Slope	MODERATE Slope	MODERATE Channery	MODERATE Channery, slope	SEVERE Channery, slope	MODERATE Channery, depth to bed- rock, slope	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 6 OF 19

TABLE 5

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Lordstown channery silt loam	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, slope	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
Lordstown extremely stony silt loam	SEVERE Stony	SEVERE Stony	MODERATE Stony	SEVERE Stony	MODERATE Stony, channery	SEVERE Stony, channery	SEVERE Stony	
147D	SEVERE Stony, slope	SEVERE Stony, slope	SEVERE Slope	SEVERE Stony	SEVERE Stony	SEVERE Slope, stony, chan- nery	SEVERE Stony, slope	
Lordstown flaggy silt loam	MODERATE Flaggy	MODERATE Flaggy, slope	SLIGHT	MODERATE Flaggy	MODERATE Flaggy	SEVERE Flaggy	SEVERE Flaggy	
46C	MODERATE Flaggy, slope	SEVERE Slope	MODERATE Slope	MODERATE Flaggy	MODERATE Flaggy, slope	SEVERE Flaggy, slope	SEVERE Flaggy	
Lordstown very stony silt loam	MODERATE Stony, chan- nery	MODERATE Stony, slope, channery	SLIGHT	MODERATE Stony, chan- nery	MODERATE Channery	SEVERE Channery	MODERATE Channery, stony, depth to bedrock	
47D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Stony, chan- nery, slope	SEVERE Slope	SEVERE Slope, chan- nery	SEVERE Slope	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 7 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Mardin channery silt loam	55B MODERATE Channery, slow permea- bility	MODERATE Channery, slow permea- bility, slope	SLIGHT	MODERATE Channery	MODERATE Channery	SEVERE Channery	MODERATE Channery	
	55C MODERATE Channery, slow permea- bility, slope	SEVERE Slope	MODERATE Slope	MODERATE Channery	MODERATE Channery, slope	SEVERE Channery, slope	MODERATE Channery, slope	
	55D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, slope	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
Mardin extremely stony silt loam	157B SEVERE Stony	SEVERE Stony	MODERATE Stony	SEVERE Stony	MODERATE Stony, channery	SEVERE Stony, channery	SEVERE Stony	
	157D SEVERE Stony, slope	SEVERE Slope	SEVERE Slope	SEVERE Stony	SEVERE Slope	SEVERE Slope, stony, channery	SEVERE Stony, slope	
Mardin flaggy silt loam	56B MODERATE Flaggy, slow permeability	MODERATE Flaggy, slow permeability, slope	SLIGHT	MODERATE Flaggy	MODERATE Flaggy	SEVERE Flaggy	SEVERE Flaggy	
	56C MODERATE Flaggy, slow permeability, slope	SEVERE Slope	MODERATE Slope	MODERATE Flaggy	MODERATE Flaggy, slope	SEVERE Flaggy, slope	SEVERE Flaggy	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 8 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Martin very stony silt loam 57B	MODERATE Stony, chan- nery, slow permeability slope	MODERATE Stony, chan- nery, slow permeability, slope	SLIGHT	MODERATE Stony, chan- nery	MODERATE Channery	SEVERE Channery	MODERATE Channery, stony	
57D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Stony, chan- nery, slope	SEVERE Slope	SEVERE Slope, chan- nery	SEVERE Slope	
Middlebury silt loam 5	MODERATE Flooding, seasonal high water table	MODERATE Flooding, seasonal high water table	SEVERE Flooding	MODERATE Seasonal high water table	MODERATE Flooding	MODERATE Flooding, seasonal high water table	MODERATE Flooding, seasonal high water table	
Mine dump MD	SEVERE Acid mate- rials, coarse fragments, slope	SEVERE Acid mate- rials, coarse fragments, slope	VARIABLE Slope	SEVERE Coarse frag- ments, slope	SEVERE Coarse frag- ments, acid materials, slope	SEVERE Coarse frag- ments, acid materials, slope	SEVERE Coarse frag- ments, acid materials, slope	
Mine dump, burning or burned MB	SEVERE Acid mate- rials, coarse fragments, slope	SEVERE Acid mate- rials, coarse fragments, slope	VARIABLE Slope	SEVERE Coarse frag- ments, slope	SEVERE Coarse frag- ments, acid materials, slope	SEVERE Coarse frag- ments, acid materials, slope	SEVERE Coarse frag- ments, acid materials, slope	
Mixed alluvial land 8	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 9 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In extensive use)	ATHLETIC FIELDS (intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Morris channery loam	31A MODERATE Seasonal high water table, slow permeability, channery	MODERATE Seasonal high water table, slow permeability, channery	MODERATE Seasonal high water table	MODERATE Channery, seasonal high water table	MODERATE Seasonal high water table, channery	SEVERE Channery, seasonal high water table	MODERATE Seasonal high water table, channery	
	31B MODERATE Seasonal high water table, slow permeability, channery	MODERATE Seasonal high water table, slow permeability, channery, slope	MODERATE Seasonal high water table	MODERATE Channery, seasonal high water table	MODERATE Seasonal high water table, channery	SEVERE Channery, seasonal high water table	MODERATE Seasonal high water table, channery	
	31C MODERATE Seasonal high water table, slow permeability, slope, chan- nery	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Channery, seasonal high water table	MODERATE Seasonal high water table, channery, slope	SEVERE Channery, seasonal high water table, slope	MODERATE Seasonal high water table, channery, slope	
Morris extremely stony loam	31D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, high seasonal high water table, slope	SEVERE Slope	SEVERE Slope, channery, seasonal high water table	SEVERE Slope	
	133B SEVERE Stony	SEVERE Stony	MODERATE Seasonal high water table, stony	SEVERE Stony	MODERATE Seasonal high water table, stony, channery	SEVERE Stony, sea- sonal high water table	SEVERE Stony	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 10 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In Intensive use	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Morris flaggy loam	32B MODERATE Seasonal high water table, flaggy, slow permeability	MODERATE Seasonal high water table, flaggy, slow permeability, slope	MODERATE Seasonal high water table	MODERATE Seasonal high water table, flaggy	MODERATE Flaggy, sea- sonal high water table	SEVERE Flaggy, sea- sonal high water table	SEVERE Flaggy	
	32C MODERATE Seasonal high water table, flaggy, slow permeability, slope	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, flaggy	MODERATE Flaggy, sea- sonal high water table, slope	SEVERE Flaggy, sea- sonal high water table, slope	SEVERE Flaggy	
Morris very stony loam	33B MODERATE Stony, chan- nery, slow permeability, seasonal high water table	MODERATE Stony, chan- nery, slow permeability, seasonal high water table, slope	MODERATE Seasonal high water table	MODERATE Stony, chan- nery, sea- sonal high water table	MODERATE Seasonal high water table, chan- nery	SEVERE Channery, seasonal high water table	MODERATE Seasonal high water table, chan- nery, stony	
	33D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Stony, chan- nery, sea- sonal high water table, slope	SEVERE Slope	SEVERE Slope, chan- nery, sea- sonal high water table	SEVERE Slope	
Mucky peat	97 SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 11 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS IN (extensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Norwich and Chippewa channery silt loams	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE Channery, high water table	SEVERE High water table	
	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table, channery	SEVERE High water table	
Norwich and Chippewa very stony silt loams	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table	SEVERE High water table, channery	SEVERE High water table	
Oquaga channery loam	MODERATE Channery	MODERATE Channery, slope	SLIGHT	MODERATE Channery	MODERATE Channery	SEVERE Channery	MODERATE Depth to bed- rock, chan- nery	
	MODERATE Slope, chan- nery	SEVERE Slope	MODERATE Slope	MODERATE Channery	MODERATE Channery, slope	SEVERE Slope, channery	MODERATE Slope, depth to bedrock, channery	
41D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Slope, channery	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
Oquaga extremely stony loam	SEVERE Slope, stony	SEVERE Slope, stony	SEVERE Slope	SEVERE Stony	SEVERE Slope	SEVERE Slope, stony	SEVERE Stony, slope	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA COUNTY, PENNSYLVANIA PAGE 12 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (extensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Oquaga flaggy loam	42B MODERATE Flaggy	MODERATE Flaggy, slope	SLIGHT	MODERATE Flaggy	MODERATE Flaggy	SEVERE Flaggy	SEVERE Flaggy	
	42C MODERATE Slope, flaggy	SEVERE Slope	MODERATE Slope	MODERATE Flaggy	MODERATE Flaggy, slope	SEVERE Slope, flaggy	SEVERE Flaggy	
Oquaga very stony loam	43B MODERATE Stony, channery	MODERATE Slope, stony, channery	SLIGHT	MODERATE Stony, chan- nery	MODERATE Channery	SEVERE Channery	MODERATE Depth to bed- rock, stony, channery	
	43D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Slope, stony, channery	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
Oquaga and Lords- town very stony loams	43F SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	
	7 SEVERE High water table, flood- ing	SEVERE High water table, flood- ing	SEVERE High water table, flood- ing	SEVERE High water table	SEVERE High water table, flood- ing	SEVERE High water table	SEVERE High water table	
Red Hook loam	17A MODERATE Seasonal high water table, slow permea- bility	MODERATE Seasonal high water table, slow permeability	MODERATE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table	SEVERE Seasonal high water table	MODERATE Seasonal high water table	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 13 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Red Hook loam 17B	MODERATE Seasonal high water table, slow permeability	MODERATE Seasonal high water table, slow permeability, slope	MODERATE Seasonal high water table	MODERATE Seasonal high water table	MODERATE Seasonal high water table	SEVERE Seasonal high water table	MODERATE Seasonal high water table	
Riverwash 9	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	SEVERE Flooding	
Strip mine spoil MS	SEVERE Slope, coarse fragments	SEVERE Slope, coarse fragments	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	SEVERE Slope	
Swartswood channery 82B loam	MODERATE Channery	MODERATE Slope, channery	SLIGHT	MODERATE Channery	MODERATE Channery	SEVERE Channery	MODERATE Channery	
82C	MODERATE Slope, channery	SEVERE Slope	MODERATE Slope	MODERATE Channery	MODERATE Slope, channery	SEVERE Slope, channery	MODERATE Slope, channery	
82D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, slope	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
Swartswood extremely stony loam 184B	SEVERE Stony	SEVERE Stony	MODERATE Stony	SEVERE Stony	MODERATE Stony	SEVERE Stony	SEVERE Stony	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Swartswood extremely stony loam	184D SEVERE Slope, stony	SEVERE Slope, stony	SEVERE Slope	SEVERE Stony	SEVERE Slope	SEVERE Slope, stony	SEVERE Stony, slope	
Swartswood very stony loam	84B MODERATE Stony, channery	MODERATE Slope, stony, channery	SLIGHT	MODERATE Stony, channery	MODERATE Channery	SEVERE Channery	MODERATE Stony, channery	
	84D SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Stony, chan- nery, slope	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
Tioga soils	1 MODERATE Flooding	MODERATE Flooding	SEVERE Flooding	SLIGHT	MODERATE Flooding	MODERATE Flooding	MODERATE Flooding	
Tioga soils, high bottom	3 SLIGHT	SLIGHT	MODERATE Flooding	SLIGHT	SLIGHT	SLIGHT	SLIGHT	
Unadilla silt loam	14B SLIGHT	MODERATE Slope	SLIGHT	SLIGHT	SLIGHT	MODERATE Slope	SLIGHT	
	14C MODERATE Slope	SEVERE Slope	MODERATE Slope	SLIGHT	MODERATE Slope	SEVERE Slope	MODERATE Slope	
Urban land	100B VARIABLE	VARIABLE	VARIABLE	VARIABLE	VARIABLE	VARIABLE	VARIABLE	
	100D SEVERE Slope	SEVERE Slope	SEVERE Slope	VARIABLE	SEVERE Slope	SEVERE Slope	SEVERE Slope	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 15 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (Intensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Urban land, alluvial materials	10LA							
Very stony land and rock land	99D	VARIABLE Flooding	VARIABLE Flooding	VARIABLE	VARIABLE	VARIABLE	VARIABLE	
	99F	SEVERE Slope, rocky, stony	SEVERE Slope, rocky, stony	SEVERE Rocky, stony	SEVERE Rocky, stony, slope	SEVERE Slope, rocky, stony	SEVERE Slope, rocky, stony	
Volusia channery silt loam	61A	SEVERE Slope, rocky, stony	SEVERE Slope, rocky, stony	SEVERE Slope, rocky, stony	SEVERE Slope, rocky, stony	SEVERE Slope, rocky, stony	SEVERE Slope, rocky, stony	
	61B	MODERATE Seasonal high water table, slow permeability, channery	MODERATE Seasonal high water table, slow permeability, channery	MODERATE Seasonal high water table, chan- nery	MODERATE Seasonal high water table, chan- nery	SEVERE Seasonal high water table, chan- nery	MODERATE Seasonal high water table, chan- nery	
	61C	MODERATE Seasonal high water table, slow permeability, slope, chan- nery	MODERATE Seasonal high water table, slow permeability, slope, chan- nery	MODERATE Seasonal high water table, chan- nery	MODERATE Seasonal high water table, chan- nery	SEVERE Seasonal high water table, chan- nery	MODERATE Seasonal high water table, chan- nery	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 16 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS IN EXTENSIVE USE	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Volusia channery silt loam 61D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Seasonal high water table, chan- nery, slope	SEVERE Slope	SEVERE Seasonal high water table, slope, channery	SEVERE Slope	
Volusia extremely stony loam 163B	SEVERE Stony	SEVERE Stony	MODERATE Seasonal high water table, stony	SEVERE Stony	MODERATE Seasonal high water table, chan- nery	SEVERE Seasonal high water table, chan- nery	SEVERE Stony	
Volusia flaggy silt loam 62B	MODERATE Seasonal high water table, slow permeability, flaggy	MODERATE Seasonal high water table, slow permeability, slope, flaggy	MODERATE Seasonal high water table	MODERATE Seasonal high water table, flaggy	MODERATE Seasonal high water table, flaggy	SEVERE Seasonal high water table, flaggy	SEVERE Flaggy	
62C	MODERATE Seasonal high water table, slow permeability, slope, flaggy	SEVERE Slope	MODERATE Seasonal high water table, slope	MODERATE Seasonal high water table, flaggy	MODERATE Seasonal high water table, flaggy, slope	SEVERE Seasonal high water table, slope, flaggy	SEVERE Flaggy	
Volusia very stony silt loam 63B	MODERATE Seasonal high water table, slow permeability, stony, chan- nery	MODERATE Seasonal high water table, slow permeability, slope, stony, channery	MODERATE Seasonal high water table	MODERATE Seasonal high water table, stony channery	MODERATE Seasonal high water table, chan- nery	SEVERE Seasonal high water table, chan- nery	MODERATE Seasonal high water table, chan- nery, stony	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 17 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (extensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Volusia very stony silt loam 63D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Seasonal high water table, slope, stony, channery	SEVERE Slope	SEVERE Seasonal high water table, slope, chan- nery	SEVERE Slope	
	MODERATE Slow permea- bility, channery	MODERATE Slow permea- bility, slope, chan- nery	SLIGHT	MODERATE Channery	MODERATE Channery	SEVERE Channery	MODERATE Channery	
75C	MODERATE Slow permea- bility, slope, channery	SEVERE Slope	MODERATE Slope	MODERATE Channery	MODERATE Slope, channery	SEVERE Slope, channery	MODERATE Slope, channery	
	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Channery, slope	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	
76B	MODERATE Slow permea- bility, flaggy	MODERATE Slow permea- bility, slope, flaggy	SLIGHT	MODERATE Flaggy	MODERATE Flaggy	SEVERE Flaggy	SEVERE Flaggy	
	MODERATE Slow permea- bility, slope, flaggy	SEVERE Slope	MODERATE Slope	MODERATE Flaggy	MODERATE Slope, flaggy	SEVERE Slope, flaggy	SEVERE Flaggy	
76C								

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 18 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS In (extensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Wellsboro very stony loam	77B	MODERATE Slow permea- bility, chan- stony, chan- nery	MODERATE Slow permea- bility, slope, stony, channery	SLIGHT	MODERATE Stony, channery	MODERATE Channery	MODERATE Channery, stony	
	77D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Slope, stony, channery	SEVERE Slope, channery	SEVERE Slope	
Williamson silt loam	114B	MODERATE Slow permea- bility	MODERATE Slow permea- bility, slope	SLIGHT	SLIGHT	MODERATE Seasonal high water table, slope	SLIGHT	
Wurtsboro channery loam	86B	MODERATE Slow permea- bility, channery	MODERATE Slow permea- bility, chan- nery	SLIGHT	MODERATE Channery	SEVERE Channery	MODERATE Channery	
	86C	MODERATE Slow permea- bility, slope, chan- nery	SEVERE Slope	MODERATE Slope	MODERATE Channery	SEVERE Slope, channery	MODERATE Slope, channery	
Wurtsboro extremely stony loam	188B	SEVERE Stony	SEVERE Stony	MODERATE Stony	SEVERE Stony	SEVERE Stony	SEVERE Stony	
Wurtsboro flaggy loam	87B	MODERATE Slow permea- bility, flaggy	MODERATE Slow permea- bility, slope, flaggy	SLIGHT	MODERATE Flaggy	SEVERE Flaggy	SEVERE Flaggy	

SOIL LIMITATIONS FOR COMPONENTS OF RECREATIONAL DEVELOPMENT

TABLE 5

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 19 OF 19

SOILS AND MAPPING SYMBOLS	CAMP SITES		SERVICE BUILDINGS IN RECREATIONAL AREAS (WITHOUT BASEMENTS)	PATHS AND TRAILS IN CAMPING AREAS	PICNIC AND PLAY AREAS IN (extensive use)	ATHLETIC FIELDS (Intensive use)	GOLF FAIRWAYS	
	TENTS	TRAILERS						
Wurtsboro flaggy loam 87C	MODERATE Slow permea- bility, slope, flaggy	SEVERE Slope	MODERATE Slope	MODERATE Flaggy	MODERATE Slope, flaggy	SEVERE Slope, flaggy	SEVERE Flaggy	
Wurtsboro very stony loam 88B	MODERATE Slow permea- bility, stony, channery	MODERATE Slow permea- bility, slope, stony, chan- nery	SLIGHT	MODERATE Stony, channery	MODERATE Channery	SEVERE Channery	MODERATE Channery, stony	
88D	SEVERE Slope	SEVERE Slope	SEVERE Slope	MODERATE Slope, stony, channery	SEVERE Slope	SEVERE Slope, channery	SEVERE Slope	

SUITABILITY OF SOILS FOR CROPLAND

The properties of soils are primary factors affecting the adaptation and production of crops. In Table 6, each soil is rated as to its suitability for cropland. These ratings do not apply to suitability for specialty crops, permanent pasture, wildlife or woodland.

The capability classes and subclasses for each soil are shown in the second column. Capability classes are a means of measuring soil limitations and degree of hazard when used for agriculture. Capability classes are numbered from I to VIII, with the degree of use limitation increasing as the number increases. Class I soils have few limitations for cropland, while Class IV soils have severe limitations. Soils in Class V through VIII are generally unsuited for cropland and have increasing limitations for pasture, woodland and wildlife as the class number increases. Additional information is contained in the glossary.

Capability classes are also divided into subclasses to provide more information about the specific limitations of each soil. Subclasses show the nature of the major limitations:

- e - erosion hazard
- w - water problems, such as wetness or flooding
- s - physical soil problems, such as stoniness, shallowness or drouthiness

Factors limiting the use of cropland are listed in the third column. Primary factors, as reflected by the land capability subclass, are broken down into more specific terms in this column. This information is useful in determining the conservation practices needed to overcome the limitations.

Productivity potential ratings for two commonly grown crops are shown in the last columns. These ratings are based upon crop yield estimates using a high level of management and are contained in "Soil Interpretations for Cropland and Pasture for the Major Land Resource Areas", coordinated by the U.S.D.A. Soil Conservation Service.

A rating of "Excellent" indicates a predicted corn yield of 120 bushels or more per acre and an alfalfa yield of more than 45 tons per acre. A rating of "Good" indicates a predicted yield of 100-120 bushels per acre for corn and 3.6 - 4.5 tons per acre for alfalfa. A rating of "Fair" indicates a predicted yield of 80-100 bushels per acre for corn and 2.6 - 3.5 tons per acre for alfalfa. A rating of "Poor" indicates a predicted yield of 79 bushels per acre or less for corn and 2.5 tons per acre or less for alfalfa. The absence of a rating indicates that the soil generally is not suited to growing the particular crop or that the crop is not usually grown on the particular soil.

Local Soil Conservation Service personnel can provide on-the-farm technical assistance in planning, applying and maintaining conservation farm systems of management. Additional information on crop yields and costs and returns for a wide variety of crops on various soils can also be obtained from the local office.

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 1 OF 14

SOILS AND MAPPING SYMBOLS		LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
				CORN	ALFALFA
Alton gravelly sandy loam	13A	IIIs	Limited available moisture and fertility	Good	Good
	13B	IIIs	Limited available moisture and fertility, slope	Good	Good
	13C	IVs	Limited available moisture and fertility, slope	Poor	Fair
	13D	IVe	Slope, limi- ted available moisture and fertility	-	Poor
	13F	VIIe	Slope, limi- ted available moisture and fertility	-	-
Arnot rocky silt loam	48B	VIIs	Rockiness, depth, limi- ted available moisture, fertility	-	-
	48C	VIIs	Rockiness, depth, limi- ted available moisture and fertility, slope	-	-

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 2 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Arnot rocky silt loam 48D	VIIIs	Rockiness, depth, limited available moisture and fertility, slope	-	-
Arnot very rocky silt loam	VIIIs	Rockiness, depth, limited available moisture and fertility	-	-
	50D	Rockiness, depth, limited available moisture and fertility, slope	-	-
	50F	Rockiness, depth, limited available moisture and fertility, slope	-	-
Atherton loam 18A	IIIw	High water table	Poor	-
Bath channery silt loam	IIe	Slope, fragipan	Good	Good
	51C	Slope, fragipan	Good	Good
	51D	Slope, fragipan	Good	Fair

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 3 OF 14

SOILS AND MAPPING SYMBOLS		LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
				CORN	ALFALFA
Bath extremely stony silt loam	153B	VIIIs	Stoniness, slope, fragipan	-	-
	153D	VIIIs	Stoniness, slope, fragipan	-	-
Bath flaggy silt loam	52B	IIIIs	Flagginess, fragipan, slope	Good	Good
	52C	IVs	Flagginess, fragipan, slope	Fair	Good
Bath very stony silt loam	53B	VIIs	Stoniness, fragipan	-	-
	53D	VIIs	Stoniness, fragipan, slope	-	-
Birdsall silt loam	348A	IIIw	High water table	Fair	-
Braceville grav- elly loam	16A	IIw	Seasonal wetness, fragipan	Good	Good
	16B	IIw	Seasonal wetness, fragipan, slope	Good	Good

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA COUNTY, PA.

PAGE 4 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Holly silt loam 6	IIIw	High water table, flooding	Good	-
Lackawanna channery loam	71B	IIe	Good	Good
	71C	IIIe	Good	Good
	71D	IVe	Good	Fair
Lackawanna flaggy loam	72B	IIIIs	Good	Good
	72C	IVs	Fair	Good
Lackawanna very stony loam	73B	VIIs	-	-
	73D	VIIs	-	-
Lackawanna and Bath very stony loams 73F	VIIIs	Slope, stoniness, depth	-	-
Lordstown channery silt loam 45B	IIe	Slope, depth	Fair	Fair

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 5 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Lordstown channery 45C silt loam	IIIe	Slope, depth	Fair	Fair
45D	IVe	Slope, depth	Fair	Poor
Lordstown extremely stony silt loam	147B	VIIIs	-	-
147D	VIIIs	Stoniness, depth, slope	-	-
Lordstown flaggy 46B silt loam	IIIIs	Flagginess, depth, slope	Poor	Poor
46C	IVs	Flagginess, depth, slope	Poor	Poor
Lordstown very 47B stony silt loam	VIIs	Stoniness, depth	-	-
47D	VIIs	Stoniness, depth, slope	-	-
Mardin channery 55B silt loam	IIw	Seasonal wet- ness, fragi- pan, slope	Good	Good
55C	IIIe	Seasonal wet- ness, fragi- pan, slope	Fair	Good

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 6 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Mardin channery silt loam 55D	IVe	Slope, seasonal wetness, fragipan	Fair	Fair
Mardin extremely stony silt loam 157B	VIIIs	Stoniness, seasonal wetness, fragipan	-	-
	157D VIIIs	Stoniness, seasonal wetness, fragipan, slope	-	-
Mardin flaggy silt loam 56B	IIIIs	Flagginess, seasonal wetness, fragipan, slope	Fair	Fair
	56C IVs	Flagginess, seasonal wetness, fragipan, slope	Poor	Fair
Mardin very stony silt loam 57B	VIIs	Stoniness, seasonal wetness, fragipan	-	-
	57D VIIs	Stoniness, slope, seasonal wetness, fragipan	-	-
Middlebury silt loam 5	IIW	Seasonal wetness, flooding	Excellent	Excellent

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 7 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Mine dump MD	VIIIIs	High acidity, slope, limited available moisture, fertility	-	-
Mine dump, burning MB or burned	VIIIIs	High acidity, slope, limited available moisture, fertility	-	-
Mixed alluvial land 8	VIIIs	Flooding, stoniness	-	-
Morris channery loam	31A IIIw	Seasonal wetness, fragipan	Fair	Poor
	31B IIIw	Seasonal wetness, fragipan, slope	Fair	Poor
	31C IIIe	Slope, seasonal wetness, fragipan	Poor	Poor
	31D IVe	Slope, seasonal wetness, fragipan	Poor	Poor
Morris extremely stony loam 133B	VIIIs	Stoniness, seasonal wetness, fragipan	-	-

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 8 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Morris flaggy loam 32B	IVs	Flagginess, seasonal wetness, fragipan	Poor	Poor
	32C	IVs	Flagginess, seasonal wetness, fragipan, slope	Poor
Morris very stony loam 33B	VIIIs	Stoniness, seasonal wetness, fragipan	-	-
	33D	VIIIs	Stoniness, slope, seasonal wetness, fragipan	-
Mucky peat 97	Unclassified		-	-
Norwich and Chippewa channery silt loams 35A	IVw	High water table, fragipan	-	-
	35B	IVw	High water table, fragipan	-
Norwich and Chippewa very stony silt loams 37B	VIIIs	Stoniness, high water table	-	-

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 9 OF 14

SOILS AND MAPPING SYMBOLS		LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
				CORN	ALFALFA
Oquaga channery loam	41B	IIe	Slope, depth	Fair	Fair
	41C	IIIe	Slope, depth	Fair	Fair
	41D	IVe	Slope, depth	Fair	Poor
Oquaga extremely stony loam	143D	VIIIs	Stoniness, slope, depth	-	-
Oquaga flaggy loam	42B	IIIIs	Flagginess, depth, slope	Poor	Poor
	42C	IVs	Flagginess, depth, slope	Poor	Poor
Oquaga very stony loam	43B	VIIs	Stoniness, depth	-	-
	43D	VIIs	Stoniness, depth, slope	-	-
Oquaga and Lords- town very stony loams	43F	VIIIs	Slope, stoni- ness, depth	-	-
Papakating silt loam	7	IVw	High water table, flood- ing	-	-
Red Hook loam	17A	IIIw	High water table	Excellent	Good

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 10 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Red Hook loam 17B	IIIw	High water table, slope	Excellent	Good
Riverwash 9	VIIIs	Flooding	-	-
Strip mine spoil MS	Unclassified		-	-
Swartswood channery loam	82B	IIe	Slope, fragi-pan	Good
	82C	IIIe	Slope, fragi-pan	Good
	82D	IVe	Slope, fragi-pan	Fair
Swartswood extremely stony loam	184B	VIIIs	Stoniness, slope	-
	184D	VIIIs	Stoniness, slope	-
Swartswood very stony loam	84B	VIIs	Stoniness, slope	-
	84D	VIIs	Stoniness, slope	-
Tioga soils 1	IIw	Flooding	Excellent	Excellent
Tioga soils, high bottom 3	I	-	Excellent	Excellent

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA COUNTY, PA.

PAGE 11 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Unadilla silt loam	14B	IIe	-	Excellent
	14C	IIIe	-	Good
Urban land	100B	Unclassified	-	-
	100D	Unclassified	-	-
Urban land, alluvial materials	101A	Unclassified	-	-
Very stony land and rock land	99D	VIIIIs	-	-
	99F	VIIIIs	-	-
Volusia channery silt loam	61A	IIIw	Seasonal wetness, fragipan	Fair
	61B	IIIw	Seasonal wetness, fragipan, slope	Fair
	61C	IIIe	Seasonal wetness, fragipan, slope	Poor
	61D	IVe	Seasonal wetness, fragipan, slope	Poor

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA COUNTY, PA.

PAGE 12 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Volusia extremely stony loam 163B	VIIIs	Stoniness, seasonal wetness, fragipan, slope	-	-
Volusia flaggy silt loam	62B	IVs	Flagginess, seasonal wetness, fragipan, slope	Poor
	62C	IVs	Flagginess, seasonal wetness, fragipan, slope	Poor
Volusia very stony silt loam	63B	VIIIs	Stoniness, seasonal wetness, fragipan	-
	63D	VIIIs	Stoniness, seasonal wetness, fragipan, slope	-
Wellsboro channery loam	75B	IIw	Seasonal wetness, fragipan, slope	Good
	75C	IIIe	Slope, seasonal wetness, fragipan	Good
	75D	IVe	Slope, seasonal wetness, fragipan	Fair

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 13 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Wellsboro flaggy loam 76B	IIIs	Flagginess, seasonal wetness, fragipan, slope	Fair	Fair
	76C	IVs	Poor	Fair
Wellsboro very stony loam 77B	VIIs	Stoniness, seasonal wetness, fragipan	-	-
	77D	VIIs	-	-
Williamson silt loam 114B	IIe	Seasonal wetness, fragipan, slope	Good	Good
Wurtsboro chan-nery loam 86B	IIw	Seasonal wetness, fragipan, slope	Good	Good
	86C	IIIe	Fair	Good
Wurtsboro extremely stony loam 188B	VIIIs	Stoniness, seasonal wetness, fragipan	-	-

SOIL SUITABILITY FOR CROPLAND

TABLE 6

LACKAWANNA

COUNTY, PA.

PAGE 14 OF 14

SOILS AND MAPPING SYMBOLS	LAND CAPABILITY CLASS AND SUB CLASS	LIMITING FACTORS FOR CROPLAND	PRODUCTIVITY POTENTIAL RATING FOR	
			CORN	ALFALFA
Wurtsboro flaggy loam 87B	IIIIs	Flagginess, seasonal wetness, fragipan, slope	Fair	Fair
	87C	IVs	Poor	Fair
Wurtsboro very stony loam 88B	VIIs	Stoniness, seasonal wetness, fragipan	-	-
	88D	VIIs	-	-

SOIL SUITABILITY FOR WILDLIFE

Wildlife, which includes game and nongame species, is an important natural resource. Modern land use planning should include some type of open space for wildlife. This may be in the form of a nature study area, wildlife refuge, regulated shooting grounds, or simply a natural area left for wildlife.

Each species of wildlife needs certain types of vegetation and water for food and cover to sustain itself. Soil characteristics, to a large extent, determine the type and amount of vegetation that can be produced on a site. Therefore, predictions can be made about soil suitability to produce habitat elements essential for wildlife.

Table 7, Soil Suitability for Wildlife, rates the suitability of each soil to produce eight habitat elements essential for the three major kinds of wildlife habitat. Ratings used for the various habitat elements and kinds of wildlife habitat are defined as follows:

1. Well Suited

Easily created, improved or maintained. Few limitations in management and satisfactory results are easily obtained.

2. Suited

Can be created, improved or maintained. Moderate limitations affect management. Moderate intensity of management and frequent changes may be required for satisfactory results.

3. Poorly Suited

Can be created, improved or maintained. Severe limitations affect management and may make it difficult or expensive to maintain.

4. Unsuited

Impractical to create, improve or maintain. Satisfactory results are improbable.

It should be noted that these ratings indicate only potential suitability because changes in land use may completely alter site conditions and thus alter the species of wildlife which inhabit the area. Also, the ability of wildlife to move from place to place is not considered in making these ratings.

The three kinds of wildlife habitat and the habitat elements making up each kind of habitat are defined in the following paragraphs.

A. Openland Wildlife Habitat

This includes habitat for birds and mammals commonly found in open situations such as crop fields, meadows, pastures and nonforested overgrown lands. Common examples of openland wildlife are quail, pheasants, doves, woodcock, cottontail rabbits, meadowlarks, killdeer and field sparrows.

Habitat elements that make up openland wildlife habitat include various combinations of the following types of vegetation depending upon the individual species.

1. Grain and Seed Crops - Domestic grain and seed producing annual plants such as corn, wheat and millet.
2. Grasses and Legumes - Domestic perennial grasses and herbaceous legumes such as timothy, alfalfa and reed canary grass.
3. Wild Herbaceous Upland Plants - Wild perennial grasses and weeds such as goldenrod, ragweed and pokeweed.
4. Hardwood Trees, Shrubs and Vines - Deciduous trees, shrubs or vines such as oaks, dogwoods, grapes and briars. These are required to a lesser degree than the preceding three.

B. Woodland Wildlife Habitat

This includes habitat for birds and mammals such as grouse, turkeys, deer, squirrels, wood thrushes, warblers and vireos, commonly found in wooded areas. Habitat elements that make up woodland wildlife habitat include various combinations of the grasses and legumes, wild herbaceous upland plants and hardwood woody plants as listed under openland wildlife habitat plus the following types of vegetation.

1. Coniferous Woody Plants - Cone-bearing trees and shrubs such as pines, cedars and yews.

C. Wetland Wildlife Habitat

This includes habitat for birds and mammals such as ducks, geese, rails, snipe, muskrat, mink and beaver, commonly found in marshes and swamps. Habitat elements that make up wetland wildlife habitat include various combinations of the following elements:

1. Wild Herbaceous Wetland Plants - Wild herbaceous plants of moist to wet sites (exclusive of submerged and floating aquatic plants) such as smartweeds, bullrushes, reed canary grass and cattails.
2. Shallow Water Development - Impoundments for the control of water where the depth generally does not exceed five feet such as low dikes, shallow dugout areas, level ditches and water control devices on marshy streams.
3. Shallow Excavated Ponds - Impounded areas with ample supplies of water of suitable quality and depth for fish and wildlife such as a one-quarter acre pond with an average depth of six feet.

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 1 OF 10

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS								KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS	OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Alton gravelly sandy loam 13A 13B 13C 13D 13F	3	2	2	3	3	4	4	4	2	3	4
Arnot rocky silt loam 48B 48C 48D	4	3	3	4	4	4	4	4	3	4	4
Arnot very rocky silt loam 50B 50D 50F	4	3	3	4	4	4	4	4	3	4	4
Atherton loam 18A	4	3	3	3	3	1	1	1	3	3	1
Bath channery silt loam 51B 51C 51D	2 3	1 2	1 1	2 2	2 2	4 4	4 4	4 4	1 2	2 2	4 4
Bath extremely stony silt loam 153B 153D	4	4	3	3	3	4	4	4	4	3	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 2 OF 10

TABLE 7

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS								KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. WETLAND PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS	OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Bath flaggy silt loam 52B 52C	2	1	1	2	2	4	4	4	1	2	4
Bath very stony silt loam 53B 53D	4	3	3	2	2	4	4	4	3	2	4
Birdsall silt loam 348A	4	3	3	3	3	1	1	1	3	3	1
Braceville gravelly loam 16A	2	1	1	2	2	3	3	3	1	2	2
16B	2	1	1	2	2	4	4	4	1	2	4
Holly silt loam 6	3	2	2	2	2	3	2	2	3	2	2
Lackawanna channery loam 71B 71C 71D	2 3	1 2	1 1	1 1	1 1	4 4	4 4	4 4	1 2	1 1	4 4
Lackawanna flaggy loam 72B 72C	2	1	1	1	1	4	4	4	1	1	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7 LACKAWANNA COUNTY, PENNSYLVANIA PAGE 3 OF 10

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS									KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS		OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Lackawanna very stony loam 73B 73D	4	3	3	2	2	4	4	4		3	2	4
Lackawanna and Bath very stony loams 73F	4	3	3	2	2	4	4	4		3	2	4
Lordstown channery silt loam 45B 45C 45D	3 3	2 2	2 2	3 3	3 3	4 4	4 4	4 4		2 3	3 3	4 4
Lordstown extremely stony silt loam 147B 147D	4	4	3	3	3	4	4	4		3	3	4
Lordstown flaggy silt loam 46B 46C	3	2	2	3	3	4	4	4		2	3	4
Lordstown very stony silt loam 47B 47D	4	3	3	3	3	4	4	4		3	3	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 4 OF 10

TABLE 7

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS								KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS	OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Mardin channery silt loam 55B 55C 55D	2	1	1	2	2	4	4	4	1	2	4
	3	2	1	2	2	4	4	4	2	2	4
Mardin extremely stony silt loam 157B 157D	4	4	3	3	3	4	4	4	4	3	4
Mardin flaggy silt loam 56B 56C	2	1	1	2	2	4	4	4	1	2	4
Mardin very stony silt loam 57B 57D	4	3	3	2	2	4	4	4	3	2	4
Middlebury silt loam 5	2	1	1	1	1	3	3	3	1	1	2
Mine dump MD	4	4	4	4	4	4	4	4	4	4	4
Mine dump, burning or burned MB	4	4	4	4	4	4	4	4	4	4	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 5 OF 10

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS									KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. WETLAND PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS		OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Mixed alluvial land 8	---	---	---	---	---	VARIABLE	---	---	---	---	---	---
Morris channery loam 31A	2	2	1	1	1	2	2	2		1	1	2
31B	2	2	1	1	1	3	4	4		1	1	4
31C	2	2	1	1	1	4	4	4		1	1	4
31D	3	2	1	1	1	4	4	4		2	1	4
Morris extremely stony loam 133B	4	4	3	3	3	3	4	4		4	3	4
Morris flaggy loam 32B	2	2	1	1	1	3	4	4		1	1	4
32C	2	2	1	1	1	4	4	4		1	1	4
Morris very stony loam 33B	4	3	3	2	2	3	4	4		3	2	4
33D	4	3	3	2	2	4	4	4		3	2	4
Mucky peat 97	4	4	4	4	4	4	4	4		4	4	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS								KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. WETLAND PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS	OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Norwich and Chippewa channery silt loams 35A 35B	4	3	3	3	3	1	1	1	3	3	1
Norwich and Chippewa very stony silt loams 37B	4	3	3	3	3	3	4	4	3	3	4
Oquaga channery loam 41B 41C 41D	4	3	3	4	4	4	4	4	3	4	4
Oquaga extremely stony loam 143D	4	4	3	4	4	4	4	4	4	4	4
Oquaga flaggy loam 42B 42C	4	3	3	4	4	4	4	4	3	4	4
Oquaga very stony loam 43B 43D	4	3	3	4	4	4	4	4	3	4	4
Oquaga and Lordstown very stony loams 43F	4	3	3	4	4	4	4	4	3	4	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7 LACKAWANNA COUNTY, PENNSYLVANIA PAGE 7 OF 10

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS									KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. WETLAND PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS		OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Papakating silt loam 7	4	3	3	3	3	3	2	2		3	3	2
Red Hook loam 17A	2	2	2	2	2	2	2	2		2	2	2
17B	2	2	2	2	2	3	4	4		2	2	4
Riverwash 9	4	4	4	4	4	4	4	4		4	4	4
Strip mine spoil MS									VARIABLE			
Swartswood channery loam 82B 82C 82D	2 3	1 2	1 1	2 2	2 2	4 4	4 4	4 4		1 2	2 2	4 4
Swartswood extremely stony loam 184B 184D	4	4	3	3	3	4	4	4		4	3	4
Swartswood very stony loam 84B 84D	4	3	3	2	2	4	4	4		3	2	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 8 OF 10

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS									KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. WETLAND PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS		OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Tioga soils 1	2	1	1	1	1	4	4	4		1	1	4
Tioga soils, high bottom 3	1	1	1	1	1	4	4	4		1	1	4
Unadilla silt loam 14B 14C	2	1	1	1	1	4	4	4		1	1	4
Urban land 100B 100D						VARIABLE						
Urban land, alluvial materials 101A						VARIABLE						
Very stony land and rock land 99D 99F	4	4	4	4	4	4	4	4		4	4	4
Volusia channery silt loam 61A 61B	2	2	1	1	1	2	2	2		1	1	2
61C 61D	2	2	1	1	1	4	4	4		1	1	4
	3	2	1	1	1	4	4	4		2	1	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7 LACKAWANNA COUNTY, PENNSYLVANIA PAGE 9 OF 10

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS									KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS		OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Volusia extremely stony loam 163B	4	4	3	3	3	3	4	4		4	3	4
Volusia flaggy silt loam 62B 62C	2	2	1	1	1	3	4	4		1	1	4
	2	2	1	1	1	4	4	4		1	1	4
Volusia very stony silt loam 63B 63D	4	3	3	2	2	3	4	4		3	2	4
	4	3	3	2	2	4	4	4		3	2	4
Wellsboro channery loam 75B 75C 75D												
	2	1	1	2	2	4	4	4		1	2	4
	3	2	1	2	2	4	4	4		2	2	4
Wellsboro flaggy loam 76B 76C	2	1	1	2	2	4	4	4		1	2	4
Wellsboro very stony loam 77B 77D	4	3	3	2	2	4	4	4		3	2	4

SOIL SUITABILITY FOR WILDLIFE HABITAT

TABLE 7

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 10 OF 10

SOILS AND MAP SYMBOLS	WILDLIFE HABITAT ELEMENTS									KINDS OF WILDLIFE HABITAT		
	GRAIN AND SEED CROPS	GRASSES AND LEGUMES	WILD HERB. UPLAND PLANTS	HARDWOOD TREES, SHRUBS, AND VINES	CONIFEROUS WOODY PLANTS	WILD HERB. WETLAND PLANTS	SHALLOW WATER DEVEL.	SHALLOW EXCAVATED PONDS		OPENLAND WILDLIFE HABITAT	WOODLAND WILDLIFE HABITAT	WETLAND WILDLIFE HABITAT
Williamson silt loam 114B	2	1	1	1	1	4	4	4		1	1	4
Wurtsboro channery 86B 86C loam	2	1	1	1	1	4	4	4		1	1	4
Wurtsboro extremely stony loam 188B	4	4	3	3	3	4	4	4		4	3	4
Wurtsboro flaggy loam 87B 87C	2	1	1	1	1	4	4	4		1	1	4
Wurtsboro very stony loam 88B 88D	4	3	3	2	2	4	4	4		3	2	4

SOIL SUITABILITY FOR WOODLAND

Knowledge of the soil in which the trees and other vegetation grow is the starting point for establishing sound woodland management.

Table 8, Soil Interpretations for Woodland, rates the soils as to management problems and hazards, species suitability, and potential to grow two kinds of trees.

Hazard of Erosion

Hazard of erosion refers to the risk of erosion and indicates the amount or intensity of practices required to reduce or control erosion in these areas. Hazard ratings are as follows:

- Slight - Risk of erosion is low when woodcrops are harvested and few, if any, practices will be needed to control erosion.
- Moderate - Erosion control measures will be needed on skid and logging roads immediately after harvesting woodcrops.
- Severe - Erosion, especially gullying, is a severe hazard where woodcrops are harvested. Harvesting and other operations should be done across the slope as much as possible. Skid trails and logging roads should be laid out on as low grades as possible and water disposal systems should be carefully maintained during logging. Erosion control measures should be used on logging roads and skid trails immediately after logging.

Equipment Limitations

Ratings in the column showing equipment limitation refer to the characteristics of the soils and topographic features that restrict or prohibit the use of equipment for harvesting trees or planting seedlings. Steepness of slope, stoniness and wetness of the soil are the principal limitations that restrict the use of equipment. Hazard ratings are as follows:

- Slight - Very few limitations.
- Moderate - Some problems exist such as stones and boulders, moderately steep slopes, or wetness during some part of the year.
- Severe - Prolonged wetness of the soil or steepness and stoniness severely limit equipment. Track-type equipment is best for general use and winches or similar special equipment may be needed.

Seedling Mortality

Seedling mortality refers to the loss of naturally occurring or planted tree seedlings resulting from unfavorable characteristics of the soil. Hazard ratings are as follows:

Slight - Expected mortality is 0 to 25 percent.

Moderate - Between 25 to 50 percent.

Severe - Over 50 percent.

Plant Competition

Plant competition refers to the rate at which brush, grass and undesirable trees are likely to invade different kinds of soil. Hazard ratings are as follows:

Slight - Competition will not prevent adequate natural regeneration and early growth or interfere with adequate development of planted seedlings.

Moderate - Competition will delay natural or artificial regeneration, both establishment and growth rate, but will not prevent the natural development of fully stocked normal stands.

Severe - Competition will prevent adequate natural or artificial regeneration without intensive site preparation and maintenance treatments such as weeding.

Windthrow Hazard

Windthrow hazard represents an evaluation of the factors that control the development of tree roots and consequently the likelihood that trees will be uprooted by wind. Hazard ratings are as follows:

Slight - Normally there are no trees blown down by the wind.

Moderate- Some trees are expected to blow down during periods of excessive soil wetness and high wind.

Severe - Many trees are expected to blow down during periods of soil wetness with moderate or high winds.

Each of the above five factors in columns 2, 3, 4, 5, and 6 is rated as slight, moderate or severe to indicate the degree to which each affects the production of timber. As an example, a rating of slight for seedling mortality indicates that no more than 25 percent of planted seedlings are likely to die; that satisfactory restocking from the initial planting can be expected; and that adequate restocking would ordinarily result from natural regeneration. A rating of moderate indicates that between 25 and 50 percent of the planted seedlings are likely to die; that some replanting is ordinarily needed; and that natural regeneration cannot always be relied upon for adequate and immediate restocking. A rating of severe indicates that more than 50 percent of planted seedlings are likely to die; that considerable replanting, special preparation of seedbeds and superior planting techniques are necessary for adequate and immediate restocking; and that restocking cannot be expected to result from natural regeneration.

Species Suitability

The species suitability means that the listed trees are recommended because they are fast growing and have high economic value. In planning the development of an existing woods, it would be advisable to review the list of trees. The objectives of the landowner will determine which species to favor when plantations are to be started. The trees listed in the planted column would be recommended as being the best for these particular soils.

Site Quality

Site quality indicates the general ability of these soils to produce timber. The ratings are based on sample plots located within the county and adjacent counties. Other soils in the county that have characteristics similar to those of the soils studied were assumed to have approximately the same rating. The yield information for yellow poplar is based on data from E. F. McCarthy, Central States Experiment Station. Information on oak is based on U. S. Department of Agriculture Technical Bulletin No. 560, Yield, Stand and Volume Tables for Even-Aged Upland Oak Forests by G. L. Schnur. The ratings are based on the average height attained by the dominant and co-dominant trees at the age of 50 years. Foresters using this rating can determine the volume of timber that normal stands will produce at different ages. Site quality ratings for yellow poplar and upland oak are defined below:

- | | | |
|--------------|--|-------------------------|
| 1. Excellent | - Site index - yellow poplar | 95+ |
| | - upland oak | 85+ |
| | Yield - board feet per acre at age 50 | |
| | - yellow poplar | 32, 150 |
| | - upland oak | - greater than 13,750 |
| | (Note: Published data for oak does not go beyond site index 80.) | |
| 2. Very Good | - Site index - yellow poplar | 85-94 |
| | - upland oak | 75-84 |
| | Yield - board feet per acre at age 50 | |
| | - yellow poplar | 24,400 |
| | - upland oak | 13,750 |
| 3. Good | - Site index - yellow poplar | 75-84, upland oak 65-74 |
| | Yield - board feet per acre at age 50 | |
| | - yellow poplar | 17,620 |
| | - upland oak | 9,750 |
| 4. Fair | - Site index - yellow poplar | 65-74 |
| | - upland oak | 55-64 |
| | Yield - board feet per acre at age 50 | |
| | - yellow poplar | 11,400 |
| | - upland oak | 6,300 |
| 5. Poor | - Site index - yellow poplar | 55-64 |
| | - upland oak | less than 54 |
| | Yield - board feet per acre at age 50 | |
| | - yellow poplar | 5,600 |
| | - upland oak | 3,250 or less |

The site index for other trees such as white pine, sugar maple, ash and larch vary somewhat but the better sites have the taller trees of the same species at the 50-year age and then decrease accordingly. More information on site index for other tree species can be obtained from the U.S.D.A. Soil Conservation Service and the Pennsylvania Department of Forests and Waters.

The returns from soils which are excellent^{very good} and good growing sites will generally justify the expenditure of money for management purposes. However, consideration should be given to the potential yield, quality of the particular species growing on the site, and the market potential. The species and number of poor quality stems growing on such sites may prohibit the investment of money for management purposes. Also, the conversion of such areas from their present state to their potential capacity may not be economically justifiable.

Soils which are fair growing sites are the most difficult to appraise for management. A thorough appraisal of the woodland as to species and quality on the site is essential. Also, the market possibility should be investigated. A proper analysis of all of these interrelated factors is essential to determine the intensity of management.

The returns from the soils which are poor growing sites generally will not economically justify management for the production of wood products. However, woodland is in most cases the most practical land use for these soils. Because of unfavorable soil characteristics these soils will generally not show a profitable return in cropland or grassland. Although returns may be slight to none for woodland, this land use is the most economical.

SOIL INTERPRETATIONS FOR WOODLAND

TABLE 8

LACKAWANNA

COUNTY, PENNSYLVANIA

PAGE 1 OF 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS					SPECIES SUITABILITY		SITE QUALITY	
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant $\frac{1}{2}$ Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding		
Alton gravelly sandy loam 13A 13B 13C 13D	Slight	Slight	Severe	Slight Slight	Slight	Red oak black oak chestnut oak red maple	White pine Virginia pine red pine	Poor	
	Slight	Moderate	Severe	Slight Slight	Slight				
	Moderate	Severe	Severe	Slight Slight	Slight				
Arnot rocky silt loam 48B 48C 48D	Slight	Slight	Severe	Slight Slight	Slight	Red oak black oak red maple white pine	Larch red pine white pine	Fair	
	Slight	Moderate	Severe	Slight Slight	Slight				
	Slight	Slight	Severe	Slight Slight	Slight				
	Moderate	Severe	Severe	Slight Slight	Slight				
Arnot very rocky silt loam 50B 50D 50F	Slight	Slight	Severe	Slight Slight	Slight				
	Slight	Moderate	Severe	Slight Slight	Slight				
	Moderate	Severe	Severe	Slight Slight	Slight				
Atherton loam 18A	Slight	Severe	Severe	Moderate Moderate	Severe	Red maple sycamore	White pine white spruce	Poor	
Bath channery silt loam 51B 51C 51D	Slight	Slight	Slight	Moderate Slight	Slight	Red oak ash sugar maple black cherry	Larch black cherry Norway spruce red pine white pine	Good	
	Slight	Slight	Slight	Moderate Slight	Slight				
	Slight	Moderate	Slight	Moderate Slight	Slight				
Bath extremely stony silt loam 153B 153D	Slight	Moderate	Slight	Moderate Slight	Slight				

$\frac{1}{2}$ The first rating is for conifers; the second rating is for hardwoods.

SOIL INTERPRETATIONS FOR WOODLAND

TABLE 8

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 2 OF 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS						SPECIES SUITABILITY		SITE QUALITY	
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding			
Bath flaggy silt loam 52B 52C	Slight	Slight	Slight	Moderate Slight	Slight	Red oak ash sugar maple black cherry	Larch black cherry Norway spruce red pine white pine		Good	
	Slight	Slight	Slight	Moderate Slight	Slight					
	Slight	Moderate	Slight	Moderate Slight	Slight					
Birdsall silt loam 348A	Slight	Severe	Severe	Moderate Moderate	Severe	Red maple sycamore	White pine white spruce		Poor	
Braceville gravelly loam 16A 16B	Slight	Slight	Slight	Severe Moderate	Slight	Yellow-poplar black cherry red oak ash sugar maple	Yellow-poplar black cherry larch Norway spruce red pine white pine		Very Good	
Holly silt loam 6	Slight	Severe	Severe	Severe Severe	Moderate	Red maple sycamore	White pine white spruce		Fair	
Lackawanna channery loam 71B 71C	Slight	Slight	Slight	Moderate Slight	Slight	Red oak ash sugar maple black cherry	Black cherry larch Norway spruce red pine white pine		Good	
	Slight	Moderate	Slight	Moderate Slight	Slight					
	Slight	Slight	Slight	Moderate Slight	Slight					
Lackawanna flaggy loam 72B 72C	Slight	Slight	Slight	Moderate Slight	Slight					

1/ The first rating is for conifers; the second rating is for hardwoods.

SOIL INTERPRETATIONS FOR WOODLAND

TABLE 8

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 3 OF 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS					SPECIES SUITABILITY		SITE QUALITY	
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding		
Lackawanna very stony loam 73B 73D	Slight	Slight	Slight	Moderate Slight	Slight	Red oak ash sugar maple black cherry	Black cherry larch Norway spruce red pine white pine	Good	
	Slight	Moderate	Slight	Moderate Slight	Slight				
Lackawanna and Bath very stony loams 73F	Moderate	Severe	Slight	Moderate Slight	Slight				
Lordstown channery silt loam 45B 45C 45D	Slight	Slight	Moderate	Moderate Slight	Slight	Red oak ash sugar maple black cherry	Black cherry larch Norway spruce red pine white pine	Good	
	Slight	Moderate	Moderate	Moderate Slight	Slight				
Lordstown extremely stony silt loam 147B 147D	Slight	Moderate	Moderate	Moderate Slight	Slight				
Lordstown flaggy silt loam 46B 46C	Slight	Slight	Moderate	Moderate Slight	Slight				
Lordstown very stony silt loam 47B 47D	Slight	Moderate	Moderate	Moderate Slight	Slight				
Mardin channery silt loam 55B 55C	Slight	Slight	Slight	Severe Moderate Severe Moderate	Slight	Red oak ash sugar maple black cherry	Black cherry larch Norway spruce red pine white pine	Very Good	
	Slight	Moderate	Slight		Slight				
Mardin extremely stony silt loam 157B 157D									

1/ The first rating is for conifers; the second rating is for hardwoods.

SOIL INTERPRETATIONS FOR WOODLAND

PAGE 4 OF 8

LACKAWANNA COUNTY, PENNSYLVANIA

TABLE 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS					SPECIES SUITABILITY		SITE QUALITY	
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant 1/ Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding		
Mardin flaggy silt loam 56B 56C 57B 57D	Slight	Slight	Slight	Severe Moderate	Slight	Red oak ash sugar maple black cherry	Black cherry larch Norway spruce red pine white pine	Very Good	
	Slight	Moderate	Slight	Severe Moderate	Slight				
Middlebury silt loam 5	Slight	Slight	Slight	Severe Moderate	Slight	Yellow-poplar red oak ash sugar maple black walnut black cherry	Yellow-poplar black cherry Norway spruce red pine black walnut larch white pine	Excellent	
Mine dump MD	-----CONSULT "A"		GUIDE FOR REVEGETATING			BITUMINOUS STRIP MINE SPOIL	IN PENNSYLVANIA."		
Mine dump, MB burning or burned	-----NOT SUITED FOR THE					GROWING OF COMMERCIAL TREE	CROPS		
Mixed alluvial 8 land	-----NOT SUITED FOR THE					GROWING OF COMMERCIAL TREE	CROPS		
Morris channery loam 31A 31B 31C 31D	Slight	Moderate	Moderate	Severe Moderate	Moderate	Red oak ash sugar maple black cherry	Black cherry larch Norway spruce white spruce white pine	Good	
	Moderate	Moderate	Moderate	Severe Moderate	Moderate				
Morris extremely stony loam 133B	Slight	Moderate	Moderate	Severe Moderate	Moderate				

1/ The first rating is for conifers; the second rating is for hardwoods.

USDA-FCR-HARRISBURG, MD. 1970

Feb. 1968

SOIL INTERPRETATIONS FOR WOODLAND

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 5 OF 8

TABLE 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS					SPECIES SUITABILITY		SITE QUALITY
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant 1/ Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding	
Morris flaggy loam 32B 32C	Slight	Moderate	Moderate	Severe Moderate	Moderate	Red oak ash sugar maple black cherry	Black cherry larch Norway spruce white spruce white pine	Good
Morris very stony loam 33B 33D	Moderate	Moderate	Moderate	Severe Moderate	Moderate			
Mucky peat 97	-----	-----	-----	-----	FOR THE GROWING OF COMMERCIAL TREE CROPS			-----
Norwich and Chippewa channery silt loams 35A 35B	Slight	Severe	Severe	Moderate Moderate	Severe	Red maple sycamore	White pine white spruce	Poor
Norwich and Chippewa very stony silt loams 37B								
Oquaga channery loam 41B 41C	Slight	Slight	Moderate	Moderate Slight	Slight	Red oak ash sugar maple black cherry	Larch Norway spruce red pine white pine black cherry	Good
Oquaga extremely stony loam 41D 143D	Slight	Moderate	Moderate	Moderate Slight	Slight			
Oquaga flaggy loam 42B 42C	Slight	Slight	Moderate	Moderate Slight	Slight			
Oquaga very stony loam 43B 43D	Slight	Moderate	Moderate	Moderate Slight	Slight			
Oquaga and Lordstown very stony loams 43F	Moderate	Severe	Moderate	Moderate Slight	Slight			

1/ The first rating is for conifers; the second rating is for hardwoods.

SOIL INTERPRETATIONS FOR WOODLAND

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 6 OF 8

TABLE 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS						SPECIES SUITABILITY		SITE QUALITY	
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant 1/ Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding			
Papakating silt loam 7	Slight	Severe	Severe	Severe Severe	Severe	Red maple sycamore	White pine white spruce		Poor	
Red Hook loam 17A 17B	Slight	Severe	Severe	Moderate Moderate	Severe	Yellow-poplar red oak ash sugar maple	Yellow-poplar larch Norway spruce white spruce white pine		Good	
Riverwash 9	-----	-----	-----	NOT SUITED FOR	THE GROWING OF	COMMERCIAL TREE CROPS	-----	-----	-----	-----
Strip mine spoil MS	-----	-----	-----	NOT SUITED FOR	THE GROWING OF	COMMERCIAL TREE CROPS	-----	-----	-----	-----
Swartswood channery loam 82B 82C	Slight	Slight	Slight	Moderate Slight	Slight	Red oak black oak ash sugar maple	Larch Norway spruce white pine red pine		Good	
Swartswood extremely stony loam 82D 184B 184D	Slight	Moderate	Slight	Moderate Slight	Slight					
Swartswood very stony loam 84B 84D	Slight	Slight	Slight	Moderate Slight	Slight					
Tioga soils 1 Tioga soils, high bottom 3	Slight	Slight	Slight	Severe Moderate	Slight	Yellow-poplar red oak ash sugar maple black walnut black cherry	Yellow-poplar black cherry Norway spruce black walnut larch white pine		Excellent	

1/ The first rating is for conifers; the second rating is for hardwoods.

SOIL INTERPRETATIONS FOR WOODLAND

LACKAWANNA COUNTY, PENNSYLVANIA

PAGE 7 OF 8

TABLE 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS					SPECIES SUITABILITY		SITE QUALITY
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant 1/ Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding	
Unadilla silt loam 14B 14C	Slight	Slight	Slight	Moderate Slight	Slight	Yellow-poplar red oak ash	Yellow-poplar larch Norway spruce black cherry red pine white pine	Good
	Moderate	Slight	Slight	Moderate Slight	Slight	sugar maple black cherry		
Urban land 100B 100D								
Urban land, alluvial materials 101A								
Very stony land and rock land 99D 99F								
Volusia channery silt loam 61A 61B 61C								
61D	Slight	Moderate	Moderate	Severe Moderate	Moderate			
Volusia extremely stony silt loam 163B	Moderate	Moderate	Moderate	Severe Moderate	Moderate	Red oak ash	Black cherry larch Norway spruce white spruce white pine	Good
Volusia flaggy silt loam 62B 62C	Slight	Moderate	Moderate	Severe Moderate	Moderate	sugar maple black cherry		
Volusia very stony silt loam 63B								
63D	Moderate	Moderate	Moderate	Severe Moderate	Moderate			

1/ The first rating is for conifers; the second rating is for hardwoods.

SOIL INTERPRETATIONS FOR WOODLAND

PAGE 8 OF 8

LACKAWANNA COUNTY, PENNSYLVANIA

TABLE 8

SOILS AND MAPPING SYMBOLS	MANAGEMENT PROBLEMS					SPECIES SUITABILITY		SITE QUALITY
	Erosion Hazard	Equipment Limitations	Seedling Mortality	Plant $\frac{1}{2}$ Competition	Windthrow Hazard	To Favor in Existing Stands	For Planting or Seeding	
Wellsboro channery loam 75B 75C	Slight	Slight	Slight	Severe Moderate	Slight	Red oak ash	Black cherry larch	Very Good
	Slight	Moderate	Slight	Severe Moderate	Slight	sugar maple black cherry	Norway spruce red pine white pine	
Wellsboro flaggy loam 76B 76C	Slight	Slight	Slight	Severe Moderate	Slight			
	Slight	Moderate	Slight	Severe Moderate	Slight			
Wellsboro very stony loam 77B 77D	Slight	Slight	Slight	Severe Moderate	Slight			
	Slight	Moderate	Slight	Severe Moderate	Slight			
Williamson silt loam 114B	Slight	Slight	Slight	Severe Moderate	Slight	Yellow-poplar black cherry ash	Yellow-poplar black cherry Norway spruce black walnut larch red pine white pine	Very Good
	Slight	Slight	Slight	Severe Moderate	Slight	black walnut red oak sugar maple		
Wurtsboro channery loam 86B 86C	Slight	Slight	Slight	Moderate Slight	Slight	Red oak ash	Black cherry larch	Good
	Slight	Slight	Slight	Moderate Slight	Slight	sugar maple black cherry	Norway spruce red pine white pine	
Wurtsboro extremely stony loam 188B	Slight	Slight	Slight	Moderate Slight	Slight			
	Slight	Slight	Slight	Moderate Slight	Slight			
Wurtsboro flaggy loam 87B 87C	Slight	Slight	Slight	Moderate Slight	Slight			
	Slight	Slight	Slight	Moderate Slight	Slight			
Wurtsboro very stony loam 88B 88D	Slight	Slight	Slight	Moderate Slight	Slight			
	Slight	Slight	Slight	Moderate Slight	Slight			

$\frac{1}{2}$ The first rating is for conifers; the second rating is for hardwoods.

USDA-SCS-WATTSVILLE, MD. 1970

Feb. 1968

GLOSSARY

This is a standard Glossary for use in defining technical terms used in making soil interpretations. It may list terms not used in the text.

AASHO SYSTEM. A system for classifying the engineering properties of soils used by the American Association of State Highway Officials.

AERATION, SOIL. The process by which air and other gases in the soil are renewed.

AGGREGATE, SOIL. A single mass or cluster consisting of many primary (sand, silt, clay) soil particles. Also called a ped.

ALLUVIAL MATERIAL. Material such as gravel, sand, silt or clay deposited by a flowing stream of water.

ASSOCIATION, SOIL. A group defined and named soil units that occur together in a particular geographic pattern. The soils may be derived from the same kind of parent material or different kinds of parent material.

AVAILABLE MOISTURE CAPACITY. The ability of a soil to hold water that will not drain away but that can be used for plant growth.

BEARING STRENGTH. This is the load supporting capacity of a soil. This strength can vary for a specific soil, depending on the amount of compaction and the moisture content.

BEDROCK, DEPTH.

- (a) Shallow: Less than 20 inches to solid bedrock.
- (b) Moderately deep: 20 to 40 inches to solid bedrock.
- (c) Deep: 40 inches or more to solid bedrock.

CALCAREOUS. Containing calcium carbonate or lime.

CAPABILITY CLASS. The capability classification places all soils in eight classes. The risk of soil damage or limitation in use become progressively greater from Class I to Class VIII.

CLASS I - Soils that have few limitations which restrict their use.

CLASS II - Soils that have some limitations which reduce the choice of plants or require moderate conservation practices.

CLASS III - Soils that have severe limitations which reduce the choice of plants, require special conservation practices, or both.

CLASS IV - Soils that have very severe limitations which restrict the choice of plants, require careful management, or both.

CLASS V - Soils that have little or no erosion hazard but have other limitations which are impractical to remove and limit their use largely to pasture, woodland, or wildlife food and cover.

CLASS VI - Soils that have severe limitations which make them generally unsuited to cultivation and limit their use largely to pasture, woodland, or wildlife food and cover.

CLASS VII - Soils that have very severe limitations which make them unsuited to cultivation and restrict their use largely to grazing, woodland, or wildlife.

CLASS VIII - Soils and land forms that have limitations which prevent their use for commercial plant production and restrict their use to recreation, wildlife, water supply and aesthetic purposes.

CHANNERY. A soil containing thin, flat pieces of sandstone, limestone, or schist from 2mm to 6 inches long.

CLAY.

(a) Fine earth portion of the soil having a diameter of less than .002 mm.

(b) As a soil textural class, soil material that contains 40 percent or more clay, less than 45 percent sand, and less than 40 percent silt.

CLAYPAN. A compact, layer rich in clay, occurring in the subsoil and separated abruptly from the overlying soil layer. Usually has slow or moderately slow permeability.

COBBLESTONE. A rounded or partly rounded piece of rock, 3 to 10 inches in diameter.

COBBLY. Containing between 15 and 50 percent rounded or partially rounded fragments of rock ranging from 3 to 10 inches in diameter.

COLLUVIAL MATERIAL. Material that has been moved downhill by gravity, soil creep, frost action, or local wash. It accumulates on the lower slopes and at the base of slopes.

COMPLEX, SOIL. A group of different soil bodies so intimately associated that they cannot be separately indicated on the mapping scale being used.

CORROSION POTENTIAL. A rating based on the drainage, conductivity and acidity of the soil which indicates how rapidly metal pipes or other objects buried in the ground will corrode.

DRAINAGE, SOIL. The following classes are used to express soil drainage:

Well drained - excess water drains away rapidly and no mottling occurs within 36 inches of the surface.

Moderately well drained - water is removed from the soil somewhat slowly, resulting in small but significant periods of wetness. Mottling occurs between 18 and 36 inches.

Somewhat poorly drained - water is removed from the soil slowly enough to keep it wet for significant periods but not all of the time.

Mottling occurs between 8 and 18 inches.

Poorly drained - water is removed so slowly that the soil is wet for a large part of the time. Mottling occurs between 0 and 8 inches.

Very poorly drained - water is removed so slowly that the water table remains at or near the surface for the greater part of the time.

There may also be periods of surface ponding. The soil has a black to gray surface layer with mottles up to the surface.

EROSION, ACCELERATED WATER. Erosion of the soil or rock over and above normal erosion, brought about by changes in the natural cover or ground conditions, including changes caused by human activity and those caused by lightning or rodents. There are several kinds of accelerated erosion. They are:

- (a) Sheet erosion or removal of a more or less uniform layer of material from the land surface. The effects are less conspicuous than those of other types of erosion that produce large channels. Frequently, in sheet erosion, the eroding surface consists of numerous very small rills.
- (b) Rill erosion, or erosion by water which produces small channels that can be obliterated by tillage.
- (c) Gully erosion or erosion by water that produces channels larger than rills. Ordinarily, these channels carry water only during and immediately after rains or following the melting of snow. Gullies are deeper than rills and are not obliterated by normal tillage.

EROSION, CLASSES.

- (a) Slight (Class 1). Up to 25 percent of the original surface soil removed.
- (b) Moderate (Class 2). Approximately 25-75 percent of the original surface soil removed.
- (c) Severe (Class 3). All of the original surface soil and part of the subsoil layers removed.

EROSION, GEOLOGICAL. The wearing away of the solid material of the land surface by wind, water, or ice and such processes as landslides and creep.

EROSION, WIND. Removal and loss of soil particles by wind.

FLAGGY. Soils that contain relatively thin fragments 6 to 15 inches long, of sandstone, limestone, slate, shale or schist. A single piece is a flagstone.

FLOODING. Water overtopping the natural banks of a creek, stream or river.
The following terms describe the frequency of flooding:

- (a) None. Never flooded.
- (b) Seldom. Stream overflow is rare but probable during a very small percentage of the year.
- (c) Occasional. Stream overflow is estimated to be once in three or more years.
- (d) Frequent. Stream overflow is estimated at one to three years.

FLOOD PLAIN. A nearly level area bordering streams that is subject to overflow.

FRAGIPAN. A dense, brittle, slowly or moderately slowly permeable subsurface layer which occurs 15 to 40 inches below the surface and may vary in thickness from a few inches to several feet.

FROST ACTION. The heaving of the soil upon freezing caused by the formation of ice lenses in the soil.

- (a) High. - Soils having a seasonal high water table between one-half and three feet of the surface and silty textures.
- (b) Moderate. - Soils that are somewhat poorly, moderately and well drained and have silty textures.
- (c) Low. - Soils having a seasonal high water table deeper than three feet from the surface and are either coarse or fine textured.

GLACIAL DRIFT. Materials such as rock, stone, gravel, sand, silt and clay moved and redeposited by ice or water from glaciers.

GLACIAL TILL. That part of the glacial material deposited directly by the ice with little or no transportation by water.

GRAVEL. Rounded stones up to three inches in diameter rounded by water action.

GROUND WATER TABLE. The upper limit of the part of the soil or underlying rock material that is wholly saturated with water.

HIGH WATER TABLE. A zone of saturation in the soil which is within 8 inches of the surface in most seasons. May be caused by a normal ground water table or a perched water table. High water table is indicated by mottling within 8 inches of the soil surface. Usually associated with poorly drained and very poorly drained soils.

INFILTRATION. The downward entrance of water into the soil surface.

LEACHED LAYER. A layer in which soluble constituents have been dissolved and removed by the passage of water through the soil.

LIQUID LIMIT. The moisture content at which a soil passes from a plastic to a liquid or fluid state.

LOAM. A soil having a relatively even mixture of sand, silt and clay. It has a somewhat gritty feel, yet fairly smooth and slightly plastic when moist.

MAPPING UNIT. It is composed of a soil having defined properties. Also included are small areas of other soils that cannot be separated because of the limits imposed by the scale of mapping. A unit may have up to 15 percent inclusions of contrasting soils.

MAXIMUM DRY DENSITY. The weight of dry soil material per one cubic foot when compacted at optimum moisture content.

MOTTILING, SOIL. Contrasting gray, red, yellow or brown color patches occurring in the soil profile, usually resulting from varying degrees of wetness.

OPTIMUM MOISTURE FOR COMPACTION. The soil moisture content in percent at which greatest compaction is obtained.

PARENT MATERIAL. The rock or other geological materials from which a soil is formed.

PERCHED WATER TABLE. A water table that is separated from the ground water table by an unsaturated layer. A perched water table occurs at a higher elevation than the normal ground water table.

PERMEABILITY. The rate at which water will move through a saturated soil.

- (a) Slow - Less than 0.20 inches per hour.
- (b) Moderately slow - 0.20 to 0.63 inches per hour.
- (c) Moderate - 0.63 to 2.0 inches per hour.
- (d) Moderately rapid - 2.0 to 6.3 inches per hour.
- (e) Rapid - More than 6.3 inches per hour.

PLASTIC LIMIT. The moisture content at which a soil changes from a semi-solid to a plastic state.

PLASTICITY INDEX. The numerical difference between liquid limit and plastic limit.

PONDING. The impounding of water on the surface of the ground.

PROFILE, SOIL. A vertical section of the soil from the surface to the parent material showing various soil layers.

ROAD FILL. Those materials, soil and rock, used for constructing roads.

ROAD FILL SUITABILITY. A rating of the soil as a source of road fill material based largely upon the texture and bearing capacity of the soil.

- (a) Poor. Usually clayey soils that have low bearing capacity when wet, are difficult to work, slow to dry and hard to compact. These are rated as A-5, A-6 and A-7 by the AASHTO System and OL, MH, CH, OH, and Pt. by the Unified System.

- (b) Fair. Loamy soils of medium bearing capacity. Soils rated A-3 or A-4 by the AASHO System and ML, SM or GM by the Unified System.
- (c) Good. Gravelly and sandy soils of high bearing capacity. Soils rated A-1 or A-2 in the AASHO System and GW-GM and SW-SM in the Unified System.

ROCKINESS. The presence of bedrock exposures within a soil area.

ROCK LEDGES OR OUTCROPS. Solid bedrock exposed at the surface.

RUNOFF. That portion of the rainfall which does not enter the soil but runs off the surface.

SAND.

- (a) Individual rock or mineral fragments having diameters ranging from 0.05 millimeters to 2.0 millimeters. Sand grains consist chiefly of quartz but they may be of any mineral composition.
- (b) As a soil textural class, soil that is 85 percent or more sand and not more than 10 percent clay. Common sand textures are very coarse, coarse, medium fine and very fine.

SEASONAL HIGH WATER TABLE. A zone of saturation in the soil which is within 8 to 36 inches of the soil surface during at least part of the year. Seasonal high water table is usually caused by a fluctuating water table generally not associated with the ground water table. Usually associated with somewhat poorly drained and moderately well drained soils.

SHALE. A sedimentary rock formed by the consolidation of silt and clay; has a finely stratified structure parallel to the bedding.

SHRINK-SWELL POTENTIAL. The difference between the volume of a wet soil as compared to a dry soil.

- (a) Low. Sandy loam, loam or silt loam textured soils.
- (b) Moderate. Silty clay loam, clay loam or sandy clay loam textured soils.
- (c) High. Some clay and silty clay textured soils.

SIEVE ANALYSIS. A method of determining soil particle sizes and texture by mechanically passing the soil through different sized sieves.

SILT.

- (a) Individual mineral particles of soil that range in diameter from 0.002 millimeters to 0.05 millimeters.
- (b) As a textural class, soil that is 80 percent or more silt and less than 12 percent clay.

SLOPE. The rise or fall of the land usually measured in feet per hundred or percent.

- (a) Level or nearly level, 0-3 percent - Class A
- (b) Gently sloping, 3-8 percent - Class B
- (c) Sloping, 8-15 percent - Class C
- (d) Moderately steep, 15-25 percent - Class D
- (e) Steep, 25-35 percent - Class E
- (f) Very steep, 35 percent plus - Class F

SOIL SERIES. A group of soils having similar kinds, thickness and arrangements of soil layers. The colors, textures, reaction and chemical composition are also very similar.

STONINESS. Rock fragments larger than 10 inches in diameter.

STRUCTURE, SOIL. The aggregation of soil particles into clumps, peds, or clusters of primary particles.

SUBSOIL. Technically, the "B" horizon of a soil with a distinct profile; commonly that part of the soil profile lying below the surface layer.

SURFACE SOIL. The first layer of soil technically referred to as the "A" horizon.

TERRACE (STREAM). Land forms lying just above the flood plains where they are generally not subject to overflow. Terraces occur as benches along the streams and rivers.

TEXTURE. The composition or make-up of soil on the basis of the percent of the different soil particles. Common textures are clay, silt, loam, sand and the various combinations of these such as sandy loam, silty loam, sandy clay loam, clay loam, silty clay loam, sandy clay and silty clay.

TOPSOIL. Usually a dark colored soil or soil material used to top-dress road banks, parks, gardens, or lawns.

UNIFIED SYSTEM. A system for classifying the engineering properties of soils developed and used by the U. S. Army Corps of Engineers.

WATER HOLDING CAPACITY. The ability or capacity of a soil to hold water.

WEATHERING. The physical and chemical disintegration and decomposition of rocks and minerals.

